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**Why We Complain: A Two-Factor Model of Complaining in
Language Use**

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**Why We Complain: A Two-Factor Model of Complaining in
Language Use**

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Why We Complain: A Two-Factor Model of Complaining in Language Use

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When people experience dissatisfaction or frustration, they often express their feelings through complaining. However, very little is known about everyday complaints. In order to understand how people make complaints, this project proposed a two-factor model of complaint expression, with the factors of certainty and emotional involvement. There were two primary goals for this project. First, this project examined how people make complaints with different expectations, particularly in language use. Second, this project explored whether listeners understand individuals' expectations behind complaints. Four major complaint expectations were identified by content analysis in the pilot study ($N = 276$). Computerized text analysis was used to examine the relationships between language markers and the four complaint expectations. The factor of certainty was assessed by personal pronoun use and certainty words, whereas the factor of emotional involvement was assessed by the use of negative emotion words.

Study 1 ($N = 272$) used multiple-choice questions to measure complaint expectations and replicated the language findings from the pilot study. Study 2 ($N = 247$) manipulated complaint expectations by experimental instructions to investigate language

usage. The results suggested weak associations between manipulated expectations and language use. Study 3 ($N = 204$) focused on listeners and examined if they could identify the accurate expectations behind complaints. The results confirmed previous findings about the overconfidence effect in social behavior.

An additional analysis examined the accuracy rate of computerized detection methods and then compared the computer's performance to human judges' accuracy. The results showed that the accuracy rate from the computerized text analysis was around 25% to 30%. Human judges performed slightly better than computerized text analysis with a 30% to 35% of accuracy rate. This is one of the first research projects that has attempted to detect and recognize human intentions surrounding complaining using language modeling.

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Introduction

Complaints are a frequent occurrence in our daily lives. When people feel dissatisfied with something, whether it is important or not, they complain about it to others. In schools, students complain about their homework and grades, and their instructors complain about student absence. In close relationships, people variously complain about their partner's handling of money, their sexual interests, and tastes in food. Sometimes, people complain about situations they are incapable of changing, such as weather, politics, the economy, and so on. Generally speaking, complaining behaviors can be viewed as verbal expressions of dissatisfaction.

People have different goals in complaining. Some people make complaints because they want to get frustration or dissatisfaction off their chests and let off steam. Others want sympathy from their friends. Some people complain as a way of asking for a solution. Overall, there are two identifiable types of complaints: instrumental and expressive complaints (Kowalski, 1996). Instrumental complaints are direct and goal-oriented. When people complain instrumentally, they expect changes and pursue a solution to their problems, such as a salary raise or a product refund. On the other hand, expressive complaints are relatively indirect and emotion-focused. If people complain in an expressive way, they usually just want to get something frustrating off their chest. Based on the functions of the two types of complaints, it is evident that each complaint has its own hidden complaint expectation that reveals what a complainer seeks from other people.

Although complaint expectations may be clear to the person who complains, listeners sometimes misunderstand or misinterpret the complaints of other's complaining behaviors. Such misunderstandings can cause aversive interpersonal responses in our daily lives and ruin relationships, such as a close personal relationship or a client-counselor relationship. Therefore, developing an efficient way to identify complaint expectations can prevent and resolve these interpersonal conflicts and also improve communication skills.

Now it is possible to study the individuals' hidden complaints. Since complaining is defined as a verbal expression, complainers may reveal their complaints in language use while speaking or chatting online. This provides an opportunity to analyze individuals' complaints and see if listeners can identify goals for complaints through language use in individuals' speech. The text-analysis software Linguistic Inquiry and Word Count (LIWC; Pennebaker, Booth, & Francis, 2007), which counts frequencies of word use, can be an appropriate tool for studying complaint expectations in language use. Through text analysis, we can identify speakers' subjective complaint expectations in order to understand their inner thoughts.

The central goal of understanding complaint expectations in language is to improve communication skills, not only in the context of human interaction but as well in artificial intelligence. For instance, artificial intelligence has recently been deployed in a wide range of fields, including basic counseling services (e.g., online chat robot) and problem solving services (e.g., Siri in Apple's iPhone). Those artificial intelligence systems are attentive to various language features. With more understanding of the

relationship between language use and complaint expectations, human beings and machine learning systems could approximate complainers' real complaints more accurately and have more opportunities to respond appropriately.

The current dissertation has three goals. The first goal is to differentiate complaint expectations and to establish distinctive language markers for complaint expectations. To achieve this goal, Study 1 asked participants to write a complaint and identify the expectations in their complaints. The written complaints were analyzed for distinctive language markers. The second goal is to investigate whether people's language use differs with different expectations. To examine the differences between complaint expectations in language use, Study 2 manipulated different complaint expectations to determine whether people adjust their language in accordance with the assigned expectations. The final goal is to determine whether listeners are accurately able to identify different expectations present in complaints. To achieve this goal, Study 3 presented complaints with different expectations to participants and examined how they respond to different complaints. Therefore, the purpose of this dissertation was to demonstrate how complaint expectations can be understood with the aid of a computerized text analysis strategy.

Literature Review

In this section, I first provide an overview of past complaint research, including studies on complaint types and consequences. Next, I propose two perspectives and a theoretical model for systematically analyzing complaint expectations. Last, I address four hypotheses contracted from my proposed model.

TWO COMMON TYPES OF COMPLAINTS

The word *complain* is a frequently used term in daily life, and its surface meaning is generally perceived as negative. The Merriam-Webster dictionary defines complain as “to express grief, pain, or discontent.” Indeed, the meaning of complain is usually described as a behavioral or verbal expression of dissatisfaction with an object, person, or situation (Kowalski, 1996).

Psychologists are interested in why people complain. The reasons that motivate people to complain are various. Sometimes, people complain about personal issues, such as losing a job or suffering from a health problem. Sometimes, people complain about public affairs, such as politics or education. Some people even complain just because they are bored. After examining a wide variety of complaint reasons, Alicke et al. (1992) proposed two types of complaints: instrumental and noninstrumental complaints. Instrumental complaints, which have been frequently studied in consumer behavior, refer to requests for financial compensation (e.g., a product refund) or emotional demands (e.g., a sincere apology from service providers). Instrumental complaints are typically used to achieve a specific goal or to change an undesirable position. Noninstrumental complaints, on the other hand, are relatively general and personal. Examples of

noninstrumental complaints include frustration in goal achievement (“I failed my final test”), sadness (“My boyfriend is cheating on me”), lack or loss of properties (“Things are a bit tight”), physical states (“I want to be taller”), etc. In general, the purpose of non-instrumental complaints is not to change anything but to express emotions. These two types of complaints could occur independently or simultaneously.

Noninstrumental complaints are referred to as expressive complaints (Kowalski, 1996). Kowalski (1996) has argued indicated that some complainers do not expect anything to change after complaining; instead, they just want to express their dissatisfaction for the purpose of making themselves feel better. In other words, if people voice their frustration or dissatisfaction to others, they can get the negative emotions off their chest. If they do not voice the bad mood but suppress it, then they may get involved in emotional rumination, which is mentally unhealthy (Bushman, 2002). Therefore, expressive complaints can function as catharsis, which is a way to clean up negative emotions. Most people identify their complaints as expressive complaints (Alicke et al., 1992). Expressive complaints occur more frequently than instrumental complaints in our daily lives.

THE CONSEQUENCES OF COMPLAINING

The normative meaning of complain is viewed negatively. When people hear the word *complain*, most of their associations are negative. Certainly, there are some negative consequences that occur following complaints. When people complain, listeners usually engage in the conversation. If speakers complain too much, they may be rejected by others who are tired of hearing their complaint stories, meaning that complaining may

cause an adverse reaction in listeners and end an ongoing relationship (Kowalski, 2002). Likewise, the speaker who has complained too often may run the risk of being labeled a complainer (Kowalski, 2002). As a consequence the stigmatized label may affect the development of future relationships. More importantly, Kowalski (2002) pointed out that complaining could lead people to magnify their feelings of dissatisfaction. In other words, if people keep complaining for everything or to anyone, they will have stronger negative feelings after complaining.

Complaints can cause negative effects to not only speakers but also listeners. Listening to a complaint increases the listener's cognitive load (Kowalski, 2002). When people complain, they expect to have a back-and-forth conversation. Thus, listeners will pay more attention to the conversation in order to figure out the intent of a complaint and respond appropriately. Therefore, it is likely that repeated complaints or a series of complaints may cause people to become cognitively fatigued. Furthermore, another significant negative effect for listeners is mood contagion (Hancock, Gee, Ciaccio, & Lin, 2008; Kowalski, 2002). Past research has shown that people who are around depressed people report more depressed and anxious feelings (Coyne, Kessler, Tal, Turnball, Wortman, & Greden, 1987). According to the mood contagion theory (Neumann, R. & Strack, 2000), people can feel emotions that are similar to those of others around them. For example, listeners may experience dissatisfaction or frustration on behalf of complainers and develop a negative mood.

Apparently, complaining has negative effects for both complainers and listeners. Some of those negative effects may not be detected by complainers, but some can be

explicitly perceived by complainers and listeners, such as an interpersonal rejection. If complaints carry nothing positive or beneficial, people should find alternative strategies to express themselves instead of complaining.

WHY DO PEOPLE COMPLAIN?

People sometime use complaints to get benefits or social rewards. For example, complaints can be used to manage other people's impressions of us (Kowalski, 1996). If a person complains about the taste of food at a fancy restaurant in front of his or her friends, the person may be trying to convey an impression that his or her standard is higher than others. This act of complaining could boost his or her sense of superiority. In addition, consumer research on social behavior has shown that if a customer repeatedly complains about receiving poor service or defective products, he or she will receive more financial or material compensation (e.g., Griegson, 1998). Such complaints as those used for impression management or material compensation have indeed encouraged people to complain more (Kowalski, 2002).

In addition, complaints also provide a way for people to improve the regulation of emotional states. Kowalski (1996) has argued that complaining behaviors help people vent their frustration or dissatisfaction and then regulate emotions.. For instance, one study asked participants to write a complaint about their dissatisfaction for the purposes of examining the catharsis argument, and the results showed that participants reported feeling much better after the complaint writing exercise (Kowalski, 1996). Although there is no direct evidence about the long-term benefits of complaining, it may be helpful for people to have immediate beneficial effects after their complaints.

From a relational perspective, complaints can be considered to facilitate a bonding process between people. When people complain to others, they share their personal information, emotions, or secrets. Sharing personal information is a form of social exchange. Social exchange theory (Blau, 1964) states that people make decisions and establish relationships based on perceived costs and benefits from others (Sabatelli & Shehan, 1993). According to social exchange theory, complaining is a way of broadcasting personal information. In a complaint conversation, listeners first gain information about complainers. In order to balance the perceived benefits, listeners will provide feedback to exchange perceived information. The common formats for giving feedback to complainers would be listening to them patiently, revealing sympathy toward the complaint, validating their feelings, etc. With the exchange of personal complaints and feedback, complainers and listeners can establish a more solid interpersonal relationship. Moreover, with the social exchange process, complainers can have social support from difference sources, such as family or close friends. Thus, complaints can be used as a strategy to recruit social support.

The last benefit of complaining is not commonly encountered in daily life but sometimes occurs when interacting with a stranger. For instance, when meeting a stranger at a bus stop, someone already sitting at the stop may briefly complain about the long waiting time to the stranger. Such short complaints function as a social lubricant or icebreaker (Kowalski, 2002) for initiating an interpersonal connection.

Taken together, complaining behaviors can generate both positive and negative outcomes. In addition to maximizing the benefits and minimizing the interpersonal

detriments of complaints, individuals should take possible consequences into account when complaining to others.

WHO COMPLAINS MORE?

Complaining is not a symptom of a disease or mental illness. Instead, it is a common social behavior. People who experience frustration or dissatisfaction complain occasionally, depending on what they encounter and how they feel in their lives. Although most people complain every day, it is not normal to complain about everything or complain to everyone with the same issue. In order to investigate complaint frequency, Kowalski (2003) developed the complaining propensity scale to measure the degree to which a person is identified as a chronic complainer who complains at high frequency or complains about the same issue. The scale contains fourteen items on a 5-point scale, resulting in a maximum total score of 70. If a person scores higher than 45, he or she is more likely to be a chronic complainer. Interestingly, Kowalski's results showed no gender difference on the complaining propensity scale. This finding does not confirm a common gender stereotype that claims females are more likely to complain than males. Kowalski further pointed out that although males and females do not differ in the frequency of complaining behaviors, they hold different views of complaining behaviors. Compared to males, females are more likely to perceive an actual complaint as an opportunity for self-disclosure. Thus, this difference in complaint perception demonstrates how males and females value complaints differently.

In consumer behavior research, the impact of personality on complaining behavior is an important issue for marketing. For example, marketing departments in

commercial companies may want to know which types of customers complain more about their products. Understanding who would be potential complainer may affect the way a marketing department plans their promotional activities. Therefore, several personality traits that can influence complaint frequency are identified in the past literature. For example, extroverts and conscientious people are more likely to complain in consumer situations (Harris & Mowen, 2001). Aggressive and assertive people have more actual complaining behaviors to commercial agencies (Richins, 1983). Identifying personality traits related to complaining behaviors is beneficial for business organizations and consumer education.

In health psychology, complaints also play an important role that affects complaint frequency and are considered as an outcome of daily health. A report in health psychology has found that people who perceive themselves as having a higher workload have more complaints about physical symptoms than usual (Reppetti, 1993). In addition to perceived workload, mood status is also related to complaints. Past research has found that both positive and negative affect are associated with complaints about physical symptoms (Watson, 1988). In other words, people in a positive mood report fewer health complaints, whereas people in a negative mood report more health complaints.

Overall, the frequency of complaints can function as an indicator in various disciplines. It tells us individuals' perception, feelings, even health status. However, it is important to know that complaining behavior can sometimes be helpful in a certain circumstance. It is only harmful when people complain too much and become chronic complainers.

THE MODEL OF COMPLAINING

Since complaints have social and emotional meanings, it is crucial to know how people initiate a complaint in a psychological process. Complaining is not a simple emotional expression. Instead, complaining is a complicated mental process that consists of several steps. For instance, people experience dissatisfaction first and then make a decision to determine whether or not to express that dissatisfaction. If people decide to complain, they also need to decide to whom they want to complain. In other words, people do not complain without any introspection. They experience dissatisfaction and then start a series of psychological activities.

In order to illustrate the underlying mechanism of complaining, Kowalski proposed a model to describe the complaining process (1996). In her model, there are four primary mental states: self-focus, awareness of discrepancy, dissatisfaction (negative affectivity), and assessment of the utility of complaining. These four mental states occur in sequence (see Figure 1). Self-focus brings attention to the discrepancy between an actual event and what the individual expects or wants. If the actual event does not meet the individual's expected standards (e.g., unexpected bad hotel service), negative emotions will be aroused. Once the discrepancy and negative emotions are perceived by individuals, they will assess the utility of complaining. If individuals think that complaining could help them satisfy their instrumental demands (e.g., a refund or an apology) or provide emotional comfort (e.g., venting), a complaint will be performed. Through this model, we can understand how people initiate a complaint in their mind and gradually generate an actual complaint.

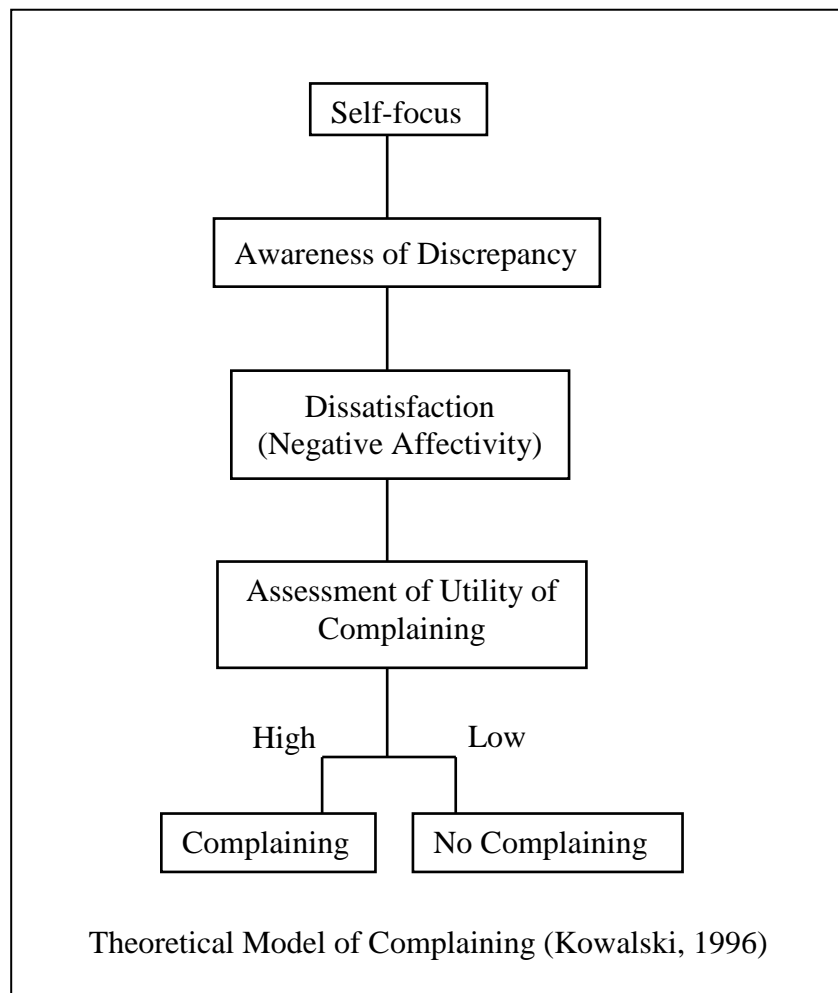


Figure 1: Kowalski's Theoretical Model of Complaining Behaviors

Among the four complaining states, the assessment of the utility of complaining is the end state that determines whether a complaint will occur. Importantly, people complain based on a min-max principle (Kowalski, 1996). When people complain, they minimize any costs that are associated with their complaints and maximize rewards from complaints. Because of the effort of maximizing the rewards, people will develop

expectations for achieving the purpose of their complaints or the rewards after complaining.

When people have expectations associated with their complaints, two questions about complaint expectations need to be addressed. First, do people have a clear expectation when complaining? If they do not have a clear expectation or any expectation, how do their listeners identify their thoughts? Second, if people have a clear expectation, what do they usually expect from their listeners when complaining? These two important questions will be addressed in the following sections.

VERIFICATION OF COMPLAINT EXPECTATIONS

Do people have a clear expectation and really know what they seek from their listeners when complaining? Self-verification theory provides an answer to this question. This theory has posited that people want to be understood by other people according to their own beliefs and feelings (Swann, 1983). In a sense, people try to seek feedback that could help them confirm their self-concept. For example, people who are emotional are more likely to seek emotional feedback than unemotional feedback (see Swann, 1983). According to self-verification theory, when people make a complaint with a specific expectation, they will expect listeners to respond in accordance with their expectations. If a person makes a very emotional complaint, according to self-verification theory, he or she will expect feedback that is related to emotional issues. If the response from listeners does not match the complainers' expectations, an interpersonal relationship may be eroded because complaining is a recursive behavior that requires involvement from both complainer and listener.

Is it possible that people do not have a clear expectation in complaining? In other words, do people really know their expectation before they complain? Self-verification theory indicated that people seek feedback to confirm their self-view. If people are uncertain as to their self-view, they do not seek feedback that is related to their self-view (Pelham & Swann, 1994). Building on self-verification theory, if people have a clear expectation for their complaint, they will expect their listeners to respond in accordance with their complaint expectations. If people do not have a clear complaint expectation, they may have other behavioral strategies to manage their dissatisfaction or frustration instead of verbal complaints. For instance, people who have no clear expectation may consider not expressing complaints and choose to inhibit or suppress the frustrating emotion. Since people seek consistent feedback to confirm their complaint expectation, identifying different complaint expectations becomes a significant issue in this research.

SOCIAL SUPPORT IN COMPLAINING BEHAVIORS

Considering various expectations from complainers, it is important to know what people usually seek from social support and to see how social support functions in complaint expectations. Social support is a perception of assistance from other people and an important resource in social networks. House (1981) has distinguished four types of social support. Emotional support involves verbal or nonverbal communication of concern, including listening, sympathizing, and “being there.” Instrumental support involves the direct provision of goods or services. Informational support is associated with the provision of advice or suggestions. Appraisal support involves the provision of

information for self-evaluation, affirmation, or social comparison. These four types describe most social support in social behaviors.

With regard to complaining behaviors, people do have specific expectations when they seek the four types of social support. Alicke et al. (1992) asked participants to record their complaints and report the reasons for their complaints. Judges then identified what complainers looked for from their listeners in complaints. The ten types of expectations in Alicke et al.'s study included venting frustration, changing behaviors, seeking advice, seeking information, seeking sympathy, coordinating behaviors, avoiding blame, no reason, unknown, and others. These ten identifiable complaint expectations in Alicke et al.'s study overlap conceptually and parallel the four types of social support. Therefore, based on the types of social support, I reduced the ten complaint expectations to four major ones: seeking advice or problem solving, seeking agreement or justice, desiring to vent or be listened to, and seeking sympathy. These four identifiable complaint expectations account for more than 80% of everyday complaints in Alicke et al.'s study.

THE FOUR COMPLAINT EXPECTATIONS

The four major complaint expectations play a similar role in complaining behaviors as social support does in social networks. The expectation of seeking advice or problem solving involves a request for practical help or suggestions (e.g., let me tell you what to do). The expectation of seeking agreement or justice is used to revalidate complainers' beliefs or opinions (e.g., you are absolutely right). The expectation of venting or being listened to may suggest that complainers want nothing from listeners except an ear. The expectation of seeking sympathy involves having someone to confirm

the complainer's feelings (e.g., I know how you feel). Although complainers may have other minor expectations in complaints, the major four complaint expectations are the most frequently cited expectations behind complaining behaviors.

The four types of expectations are the major categories of responses complainers expect from listeners. However, how could listeners understand and identify which expectation complainers are holding? The identification of complaint expectations can be views as a type of decision making. In the decision making literature, certainty and negative emotion are two commonly used factors that can help individuals to process information. For example, if customers complain with certainty, commercial agents are more likely to believe their customers' arguments about the product (Singh & Wilkes, 1996). This means, people interpret the meaning of other's behavior according to level of certainty other people perform. With regard to negative emotion, people rely on emotional information to make attribution in decision making. For example, people can identify social status from a social situation based on who expresses more anger (Tiedens, 2001). In a sense, detecting negative emotion can help people understand interactive or dynamic situations, such as complaining. Thus, in order to answer this question, I propose two perspectives for systematically analyzing the four types of complaint expectations.

EMOTIONAL INVOLVEMENT

Emotional involvement is a commonly used signal for everyday communication (Buck, Losow, Murphy, Costanzo, 1992). Through emotion involvement, people can reveal their internal emotional or affective states to communicate efficiently. Functionally

speaking, complaining is a form of demonstrating emotional involvement. Complainers exhibit their dissatisfaction, frustration, or disappointment by expressing negative emotions.

If complainers experience a lot of emotion, they may express strong emotional involvement as a way to communicate with other people. Indeed, emotional involvement is related to affective communication (e.g., Juslin & Laukka, 2003; King & Emmons, 1990). Complainers could make their expectations clearer to listeners by expressing emotional involvement. Recalling the evidence of self-verification (Swann, 1983), emotional people are more likely to seek emotional feedback from other people. Similarly, if a person complains in a very emotional way, according to self-verification theory, he or she will seek emotional feedback. If an individual complains with less emotion, he or she may expect another type of feedback instead of emotional feedback. Taken as a whole, the level of emotional involvement complainers express in complaining may function as an index that can reflect whether or not complainers expect emotional feedback from listeners.

CERTAINTY ABOUT COMPLAINT CAUSES

In addition to emotional involvement, certainty can also play an important role in complaining behavior. By definition, certainty refers to how confident one is in a belief, and that confidence can be evaluated individually (Fischhoff, Slovic, & Lichtenstein, 1977). The idea of certainty has been widely studied in self-concept literature. Examples include how certainty is associated with positive affect (Baumgardner, 1990), whether certainty is a stable self-concept (Pelham, 1991), and in which situations people have

more certainty (Fischhoff, Slovic, & Lichtenstein, 1977). In complaining behavior, certainty can be used to describe either the complaint itself or the cause of the complaint.

Certainty in complaints is different from certainty related to the cause for the complaint. People who complain are typically certain about their complaining behavior and expect a certain type of feedback to confirm their needs, motives, or thoughts. This is the verification of complaint expectations. However, the fact that people are certain about a type of complaint expectation does not mean that they have certainty about the cause. For example, a boy has difficulties with his homework and complains to his parents. The boy is certain about the complaint because he needs help from parents, and the difficulty is the cause of his complaint. In terms of the complaint cause, the boy is uncertain about how to do the homework that causes him to complain. In other words, people can be certain about the act of complaining and be uncertain as to the problems they complain about. In that sense, certainty about the cause of a complaint can be useful in illustrating the motive for seeking different expectations in complaints.

THE PROPOSED TWO-FACTOR MODEL OF COMPLAINT EXPECTATIONS

Recalling the four primary complaint expectations—including seeking advice or problem solving, seeking agreement or justice, desiring to vent or be listened to, and seeking sympathy—how do we systematically account for the four expectations by using the perspectives of emotional involvement and certainty? Here, I have proposed a theoretical model, and named the two-factor model of complaint expression (see Figure 2), to explain how people make complaints in accordance with their expectations.

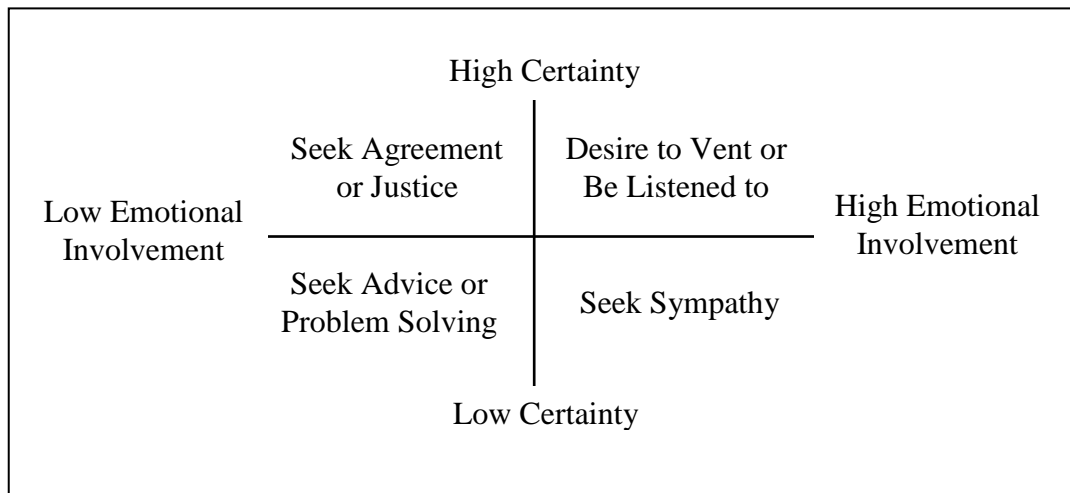


Figure 2: The Two-Factor Model of Complaint Expectations

This model integrates two factors: emotional involvement and certainty.

Emotional involvement refers to the intensity or occurrence frequency of expressed emotion. If individuals express a high intensity of emotion (e.g., very disappointed) or express negative emotion frequently when complaining, they will be labeled with high emotional involvement. If individuals express a low intensity of emotion or express negative emotion at a very low rate, they will be labeled with low emotional involvement. In terms of the nature of complaint causes, certainty refers to the degree to which people know how to react to their complaining causes. If they know the way to react to the complaining causes, they display more certainty in complaints. On the contrary, if they do not know the way to react to the complaining causes, they display less certainty.

The factors of emotional involvement and certainty compose the two-factor model of complaint expression. In the model, the factor of emotional involvement describes the level of emotion, whereas the factor of certainty emphasizes idea that people know how

to react to their complaining causes. These two factors can be conceptually independent. Therefore, this model is presented in a coordinate, and the four primary complaint expectations locate in four quadrants (see Figure 2). Now, this two-factor model was applied to describe how individuals make complaints with different expectations.

Seek advice or problem solving

If individuals expect to receive feedback that is not involved in emotional response, they complain with less emotion. Also, people may be uncertain as to the problem they complain about; therefore, they seek advice or solutions to manage the problem. In that sense, people who seek advice through complaints will reveal less certainty and less emotional involvement in complaints.

Hypothesis 1: Complainers who seek advice or problem solving will have less emotional involvement and have less certainty.

Seek agreement or justice

If individuals want listeners to agree with their opinions, they will describe an event or a statement and expect an agreement or validation of their complaints. Since people who seek agreement already have definite opinions in their minds and expect other people to confirm their opinions, they are certain as to the subject they complain about. For example, if a man complains about a politician, he may expect other people to agree with him. As for the factor of emotional involvement, an opinion statement is an expression of personal views, not the expression of emotion. Thus, people who seek agreement through complaints will reveal less emotion.

Hypothesis 2: Complainers who seek agreement or justice will have less emotional involvement and have more certainty.

Desire to vent or be listened to

Some complainers only need someone to listen to them and allow them to vent. When people want vent, they mostly have a clear target (e.g., a third person or party) to complain about with strong emotional involvement. In other words, they know who they want to complain about and their emotions toward the target.

Hypothesis 3: Complainers who desire to vent or be listened to will have more emotional involvement and have more certainty.

Seek sympathy

Seeking sympathy is essentially similar to seeking advice; however, the level of emotion associated with seeking sympathy is different from those associated with seeking advice. For example, a woman with breast cancer complains about her physical pain. She experiences uncertainty about the disease but desires to receive sympathy by complaining about her cancer. People who want sympathy reveal more emotion and have less certainty about the subject they complain about.

Hypothesis 4: Complainers who seek sympathy will have more emotional involvement and have less certainty.

OVERVIEW OF THE PRESENT RESEARCH

Complaining research has been well studied in health psychology (e.g., Harris & Mowen, 2001; Kowalski, 2003; Repetti, 1993; Waston, 1988) and consumer behavior (e.g., Bearden & Teel, 1983; Mittal, Huppertz, Khare, 2008; Ward and Ostrom, 2006).

However, none of the past complaint research investigates discourse comprehension of everyday complaints. In social psychology, Kowalski (1996) focused on the process of making a complaint. Alicke et al. (1992) discussed the types of complaints and analyzed the reasons for making everyday complaints but ignored how people interpret and respond to complaints. It is necessary and important to investigate whether or not listeners interpret complaints in the way complainers expect. If a person complains to seek advice but receives sympathetic feedback, a misunderstanding will occur between the speaker and listener. Likewise, if a person desires to vent dissatisfaction or sadness and wants someone to complain to, giving advice will be unhelpful. Indeed, findings from a study about bereavement supported the idea that giving advice was not always helpful (Lehman, Ellard, & Wortman, 1986). Therefore, understanding the correct expectation behind a complaint is important, particularly in interpersonal behavior and communication research.

Since people have various reasons to complain, knowing the expectations in complaints becomes crucial for subsequent interactions. The aim of this research is to investigate whether listeners can accurately identify the expectations hidden behind complaints. In order to achieve this, participants were asked to write a complaint and recognize his or her primary expectation for complaining.

Asking participants to complain in writing has a remarkable advantage. The written complaints contain rich information on language use. For example, people have demonstrated different language use when lying versus telling truth (Hancock, Curry, Goorha, & Woodworth, 2008). Likewise, people who have different expectations (e.g.,

seeking advice vs. sympathy) may demonstrate distinctive language patterns. If so, the distinctive language patterns can be applied in social interactions.

In summary, three goals motivate this research. The first goal is to identify linguistic markers among different complaint expectations that are used when people make complaints. The second goal seeks to determine if manipulated complaint expectations result in different language patterns. Finally, the research addresses the degree to which listeners accurately recognize the expectations in complaints and if listeners respond to the complaint appropriately.

Pilot Study

The two-factor model in this research was built on four complaint expectations. Before testing the model, it is important to ensure that the four complaint expectations were major ones. To do this, content analysis was adopted to investigate the types of complaint expectations and to see whether the four expectations were important. A pilot study was conducted online. Participants were asked to recall a recent negative event and write a complaint story about it. After their writing, three open-ended questions were used to investigate to whom participants want to complain, the topic they complain about, and their expectation from potential listeners who read their written complaints.

Unlike most complaint research on consumer behaviors, this pilot study particularly focused on everyday complaints, including consumer dissatisfaction, family conflicts, health problems, financial issues, interpersonal problems, etc. A content analysis strategy was adopted to develop coding schemes for the judges that could derive various complaint topics, targets, and expectations from open-ended questions. This analysis strategy provided a big picture of and clear characteristics for the nature of everyday complaints.

Importantly, this pilot study asked participants to actively report their complaint expectations for potential listeners. Alicke et al. (1992) asked judges to identify the reasons why participants desire to complain. Conceptually, the desire to complain could be viewed as the complaint expectations from listeners. However, judges' ratings might be inaccurate because of their subjective opinions. In addition, asking participants to report their expectations was more straightforward and accurate than asking judges to

content analyze in order to understand complaint expectations. As a result, participants were asked to report the expectations behind their complaints in this project.

The primary purpose of this pilot was to develop a coding system to identify the characteristics of everyday complaints, to investigate whether people use different language based on their specific complaint expectations, and to establish language patterns associated with complaint expectations. Judges content analyzed complaint texts first and then generated categories for each open-ended question to develop the coding system. Importantly, this pilot preliminarily assessed the two-factor model of complaint expression in language use and determined whether the four complaint expectations reflect different concepts in language use.

Complaint texts were also analyzed by LIWC. Recall that in the two-factor model of complaint expectations, the two factors are emotional involvement and certainty. In order to use LIWC variables to test the two factors, this pilot study only focused on three primary language domains, including negative emotion words, certainty words, and pronouns (e.g., first person singular pronoun). The use of negative emotion words (e.g., hate, sad) was usually adopted to measure the level of negative emotion (e.g., Pennebaker, 1993; Pennebaker, Mayne, & Francis, 1997). The use of certainty words (e.g., always, never) served as a direct measurement of certainty. The use of first person singular pronouns has been identified as a linguistic maker of insecurity and physical or mental pain (Chung & Pennebaker, 2007; Rude, Gortner, & Pennebaker, 2004; Pennebaker, 2011). When people experience insecurity, they become more uncertain and pay more attention to themselves (Pennebaker, 2011). On the contrary, if they are secure

and feel certain of themselves, they focus on the external world. One research has indicated that third person plural pronouns and certainty words can serve as markers of confident language (Varner, Roscoe & McNamara, 2013). For this reason, four LIWC pronoun categories (we, you, she/he, and they) were adopted as indirect measures of certainty in this research. The rate of first person singular pronouns was reverse coded as an indirect measure of certainty.

In summary, the objectives of this pilot study were used (1) to assess how content analysis can assist in recognizing everyday complaint topics, targets, and expectations, (2) to assess the importance of the four complaint expectations, and (3) to distinguish the use of language markers between different complaint expectations.

METHOD

Participants

Two hundred and seventy-six participants (119 females) were recruited from Amazon's Mechanical Turk (MTurk), which is a popular, high-quality online data collection platform (Buhrmester, Kwang, & Gosling, 2011). MTurk is frequently used for academic research, and participants on MTurk come from more than 50 countries (Paolacci, Chandler, & Ipeirotis, 2010). The ages of participants in the pilot study ranged from 18 to 63 ($M_{\text{age}} = 31.1$, $S.D. = 11.6$). Ninety-seven percent of participants in this study were from the United States, and ninety-eight percent of participants were English native speakers. Participants were paid fifty cents for completing this pilot study.

Procedure

Participants logged into the MTurk website and signed up for the study, titled “Want to complain? Click here.” After reading the cover page, participants understood how much they would be paid and what was expected of them in the writing task. They were asked to provide their demographic information and then were presented with the following instructions:

A complaint is defined as a verbal expression of dissatisfaction with a person, object, event, or situation. Please recall a negative event that recently happened and imagine complaining to someone about it. Try to write continuously, and do not stop writing until the 5 minutes have passed. Be sure to write more than 60 words, approximately 5 or 6 sentences.

After the complaint writing task, participants were asked about the person to whom they were complaining in their writing, the topic they complained about, and what they expected their listeners to say or to do in response to their complaints (see Appendix A.). Finally, participants were debriefed and thanked.

Judges’ coding

There were three open-ended questions in this pilot: to whom participants complain, the topic they complain about, and their expectations from potential readers. Two judges reviewed all responses and generated coding categories for each open-ended question. In the final coding system, there were nine categories for participants’ complaint target, seven categories for their complaint topic, and seven categories for their complaint expectation. Complaint target and topic were listed as a single option for the two judges. Complaint expectations were multiple options because some participants

revealed more than one expectation. The two judges practiced the coding procedure with five complaint samples as a training step. During the practice training, they were blind to gender and age of the given complaints to ensure they totally focused on the content of complaints. The two judges coded the open-ended questions independently with the developed coding system. The reliability of the coding process was checked. The Cronbach's alphas for complaint target and topic were 0.86 and 0.75, which were at good and respectable levels (see p.85, Devellis, 1991). Since there could be multiple expectations per complaint, the complaint expectation item pertaining to seven different expectations were transformed into seven dichotomous variables with different complaint expectations (1= yes, 0 = no). The Cronbach's alphas for each complaint expectation variable were calculated separately. The average Cronbach's alpha for complaint expectation was 0.79, ranging from 0.71 to 0.88. The average Cronbach's alpha was also at a respectable level. The primary researcher in this project compared the two judges' coding results and resolved minor inconsistencies. The final coding results were used in this pilot.

RESULTS

The pilot study explored the characteristics of everyday complaints through content analysis of the complaint target, topic, and expectation. Since the data for complaint target and topic were nominal, they were analyzed to examine gender difference in chi-square tests. The complaint expectations were analyzed separately in correlation.

To whom do we complain?

There were nine categories of complaint targets: anyone, boy or girlfriend, friend or acquaintance, God, parents, service provider, siblings, spouse, and others. The frequencies and percentages of complaint targets are shown in Table 1. A two-way chi-square was used to examine gender difference in complaint targets. The results showed no gender difference in complaint target, $\chi^2(8) = 9.35, p = .31$. Based on the frequencies of complaint targets, the largest category was anyone, accounting for 33.0% of all complaint targets. The other major categories were friend or acquaintance (19.6%) and service provider (22.8%). These three categories accounted for slightly above 75% of all complaint targets. The categories boy or girlfriend, parents, siblings, and spouse accounted for 15% of all complaint targets.

<i>Complaint target</i>	Male	Female
Anyone	49 (31.2%)	42 (35.3%)
Service provider	39 (24.8%)	24 (20.2%)
Friend or acquaintance	30 (19.1%)	24 (20.1%)
Other	14 (8.9%)	5 (4.2%)
Parents	6 (3.8%)	5 (4.2%)
Boy or girl friend	4 (2.5%)	5 (4.2%)
God	7 (4.5%)	2 (1.7%)
Siblings	3 (1.9%)	8 (6.7%)
Spouse	5 (3.2%)	4 (3.4%)
Total	157 (100%)	119 (100%)

Table 1: Frequencies and Percentages of Complaint Targets in Gender

Overall, friends or acquaintances, family members (parents, siblings, and spouse), and service providers were the most common targets people consider complaining to. It is worth noting that approximately one-third of people had no specific target to complain to. They could complain to anybody, including strangers.

What do we complain about?

Seven complaint topics were identified: acquaintance, attitude, Job/financial issues/career, consumer behavior, family/friends, personal affairs, and politics. The frequencies and percentages of complaint topics are shown in Table 2. A two-way chi-square was tested. The results showed a gender difference in complaint topics, $\chi^2(6) = 20.43, p < .01$. A post hoc comparison on the topic of family or friends indicated that females complain about family or friend issues more than males, $p < .01$. Based on the frequencies of complaint topics, the largest four categories were job/financial issues/career (30.4%), personal affairs (20.7%), family/friends (16.3%), and consumer behavior (15.9%). These four categories accounted for approximately 80% of all complaint topics. In addition, the frequencies of consumer behavior among all categories in this pilot are parallel to past findings (Alicke et al., 1992).

In summary, most participants complained about everyday events. For some specific topics, such as political issues, they also considered that as a negative event when complaining.

<i>Complaint topic</i>	Male	Female
Job, financial issues, or career	55 (35.0%)	29 (24.4%)
Personal affairs	33 (21.0%)	24 (20.2%)
Family or friends	14 (8.9%)	31 (26.1%)
Consumer behavior	30 (19.1%)	14 (11.8%)
Politics	14 (8.9%)	7 (5.9%)
Acquaintance	5 (3.2%)	9 (7.6%)
Attitude	6 (3.8%)	5 (4.2%)
Total	157 (100%)	119 (100%)

Table 2: Frequencies and Percentages of Complaint Topics in Gender

What do we expect from others when we complain?

The complaint expectations were a central issue in the two-factor model. For this reason, it was necessary to investigate the number of complaint expectations to determine which one was promising in the two-factor model. Since the complaint expectation was an open-ended question, some participants described multiple expectations. Therefore, complaint expectations might not be mutually exclusive. Seven categories of complaint expectations were identified, including being ignored, desire to vent and be listened to, encouragement, seek advice or problem solving, nothing, seek sympathy, and seek agreement or justice. The frequencies and percentages of complaint expectations are shown in Table 3. The most frequent expectation was seek advice or problem solving, accounting for 36.2% of all complaint expectations. The other frequent categories were desire to vent and be listened to (19.2%), seek sympathy (18.8%), and seek validation or

justice (26.4%). These three categories accounted for slightly more than 60% of all complaint expectations.

The frequencies for the categories of being ignored and encouragement were smaller than 2%, and the category of nothing did not reflect any complaint expectation. Thus, the three categories were removed from further discussion and following studies, leaving four expectations in this research. In addition, of 276 participants, twenty-nine participants (11%) were identified with two complaint expectations and one participant with three complaint expectations.

<i>Complaint Expectation</i>	Male	Female
Seek advice or problem solving	61 (38.9%)	39 (32.8%)
Seek agreement or justice	42 (26.8%)	31 (26.1%)
Desire to vent and be listened to	28 (17.8%)	25 (21.0%)
Seek sympathy	26 (16.6%)	26 (21.8%)
Nothing	8 (5.1%)	8 (6.7%)
Be ignored	2 (1.3%)	3 (2.5%)
Encouragement	1 (0.6%)	1 (0.8%)
Total	157 (100%)	119 (100%)

Table 3: Frequencies and Percentages of Complaint Expectations in Gender (Note: Complaint expectations are multiple options.)

In order to examine whether the four complaint expectations were mutually inclusive or exclusive, the four expectations were submitted to a correlational analysis. The correlational results are shown in Table 4. All correlational coefficients between the

four complaint expectations were negatively associated, suggesting that complaint expectations were not mutually inclusive, and participants generally had a primary complaint expectation when complaining.

	1.	2.	3.	4.
1. Seek advice or problem solving	---			
2. Seek agreement or justice	-.35**	---		
3. Desire to vent or be listened to	-.29**	-.23**	---	
4. Seek sympathy	-.27**	-.27**	-.12*	---

Table 4: Correlational Matrix between the Four Complaint Expectations (Note: * $p < 0.05$, ** $p < 0.01$)

Complaint expectations might be related to complaint topics. For instance, people might prefer helpful suggestions when having issues about consumer behaviors and prefer emotional support for personal issues. With regard to the big picture of how complaint expectations were associated with complaint topics, the frequencies of complaint expectations are presented by complaint topic in Table 6. One of the interesting findings in Table 5 was that the expectation for seeking advice or problem solving accounted for 50.0% of complaints about consumer behaviors, 34.5% of complaints about job or financial issues, and 36.8% of complaints about personal affairs. It suggested that participants also expected to have advice or suggestions from other people, not just seek emotional support or agreement, when complaining.

<i>Complaint Topic</i>	<i>N</i>	Seek advice or problem solving	Seek validation or justice	Desire to be listened or vent	Seek sympathy
Job or financial issues	84	29	20	20	15
Personal affairs	57	21	13	10	13
Family or friends	47	9	18	12	8
Consumer behavior	46	23	6	5	12
Politics	19	9	7	2	1
Acquaintance	13	5	6	1	1
Attitude	12	4	3	3	2
Total	278	100	73	53	52

Table 5: Frequencies of Complaint Expectations by Topics

To briefly summarize, the four expectations in the two-factor model were frequently used in complaints. In addition, these four expectations were mutually exclusive. Only very few people had multiple expectations at one time.

Language Analysis

The purpose of language analysis in this pilot was to examine distinctive language markers associated with different complaint expectations. The reason for identifying the distinctive language markers was to investigate whether language markers could help listeners to accurately identify complaint expectations. If so, then the language markers could be significant clues and have important implications in social interactions. Therefore, the fundamental language markers of complaint expectations should be established first.

The complaint texts were submitted to the text-analysis program LIWC for analysis. The LIWC outputs provided the base rates of various language variables. This pilot focused on three domains: certainty words, pronoun use, and negative emotion words. The use of certainty words (e.g., always, never) served as a direct measure of certainty. In order to use LIWC pronoun categories to measure certainty, the variable certainty was computed by the following formula: we + you + she/he + they – I. Conceptually, higher scores on the formula reflected more certainty, although this composite variable was not significantly related to the rate of certainty words ($r = .08$, $p = .21$). The composite variable contained personal pronouns that refer to human issues, whereas the certainty word category contained content words (e.g., never, absolutely) and few function words (e.g., should, must) that refer to situations. Due to the lexical difference, the pronoun composite variable and certainty word category were separately used in this analysis. The negative emotion category provided by LIWC refers to words that are related to negative emotion in general. Overall, the use of certainty words and pronoun composite scores were used to measure certainty, and the negative emotion words category was used to measure emotional involvement.

The base rates of the language categories were correlated with the dichotomous coding results of complaint expectations. The results are shown in Table 6. For those complaints made with the expectation of seeking advice or problem solving, complainers used fewer negative emotion words, compared to complainers who had other complaint expectations. It suggested that people who sought advice to fix their problems were less emotional in their complaints. In addition, people who sought advice used more words

per sentence to describe their complaints. This might suggest that those people had relatively complicated thinking styles when seeking advice. People who wanted others to agree with their opinions when complaining showed more certainty in pronoun use (fewer first-person singular pronouns and more third-person singular pronouns), compared to complainers who had other complaint expectations. For those complaints made with the expectation of the desire to vent or be listened to, complainers used more negative emotion words, compared to complainers who had other complaint expectations. This suggested that people were inclined to vent and be listened to when revealing their current negative emotions in complaints. Lastly, people who wanted sympathy from other people revealed less certainty in pronoun use, compared to complainers who had other complaint expectations. It indicated that they experienced more insecurity as reflected in the linguistic markers of pronoun use about what had happened to them in their complaints.

LIWC Variable	Mean (S.D.)	Advice	Agreement	Be listened	Sympathy
Word count	141 (73.2)	.02	-.02	.06	.01
Words/sentence	19.1 (9.97)	.11 [†]	-.02	-.07	-.01
Certainty Words	1.59 (1.30)	-.12 [*]	.13 [*]	.09	-.11 [*]
Certainty	-2.88 (5.67)	-.01	.15[*]	.03	-.15[*]
We	0.74 (1.39)	.06	-.02	.01	-.02
You	0.58 (1.51)	.13 [*]	-.06	-.05	-.10
Shehe	1.91 (2.87)	-.14 [*]	.15 [*]	.04	.01
They	1.28 (1.81)	.02	.04	.09	-.13 [*]
I	7.39 (3.60)	-.01	-.14 [*]	.01	.14 [*]
Negative Emotion	2.82 (1.89)	-.12[*]	-.07	.12[*]	-.04

Table 6: Linguistic Analysis between Different Complaint Expectations (Note: * $p < 0.05$, † $p < .10$. Advice = Seek advice or problem solving; Agreement = Seek agreement or justice; Be listened = Desire to vent or be listened to; Sympathy = Seek sympathy)

DISCUSSION

The coding systems for investigating complaint targets, topics, and expectations were developed in the pilot, and allowed participants to specify their complaint ideas. In addition, the results of the language analyses preliminarily support the two-factor model of complaint expectations. For example, when participants sought advice in their complaint, they used fewer certainty words and were less emotional in the use of negative emotion words, and fully supported the first hypothesis. These results indicated that when participants sought advice through complaining, they did not pay attention to their

emotional issues too much and had less certainty about how to handle the subjects they complained about. In addition, participants who sought agreement of their opinions used more certainty words and third person singular pronouns but fewer first person singular pronouns, suggesting more certainty in their complaints. There was no association between emotional words and the expectation of seeking agreement.

In terms of the second hypothesis that people who sought agreement are self-certain and less emotional, results in the pilot were partially supportive. In the pilot, when people wanted to vent or had a listener to complain to, they used more negative emotion words to reveal their temper, supporting part of the third hypothesis that people who complained with the expectation of venting or being listened to express more emotion. Last, people who wanted sympathy used fewer certainty words and more first person singular pronouns to reveal self-uncertainty or insecurity. These results supported part of the fourth hypothesis that people who sought sympathy were less self-certain in complaints.

The pilot study showed the feasibility of using language markers to identify complaint expectations and examined the two-factor model of complaint expectation. Overall, the results of the pilot only supported part of the four hypotheses in the model. There were two possible reasons that might account for the unsupported hypotheses. First, people reported their expectations in an open-ended question. This led few participants to report multiple expectations, which might have contaminated the data and changed the final results. Second, language profiles were the only measure used for testing the model in the pilot. Some psychological properties of complaint expectations

might not be sensitive enough to measure through language. These two potential issues were dealt with in Study 1.

Study 1: Language Markers of Various Complaint Expectations

The four complaint expectations in the model were examined on frequency in the pilot study. In addition, the four expectations were related to language markers. Presumably, complainers only consider the four major expectations. Did language markers differ between the four expectations? The pilot study used an open-ended question to tap complaint expectations. To be more precise to assess language markers, it is important to replace the open-ended question with a close-ended question. The close-ended question of complaint expectations could assess participants' response in a more precise way.

The purpose of Study 1 was to replicate the language findings in the pilot and test the two-factor model of complaint expression. As in the pilot study, participants recalled a recent negative event and wrote a complaint about it. After writing, participants were asked to report their complaint target, topic, and expectation. Due to the development of the coding system in the pilot, Study 1 asked participants to specify their responses in multiple-choice questions that were derived from the pilot.

Since the proposed model consisted of two factors—emotional involvement and certainty—both were examined. Emotional involvement was measured by the rates at which emotional words were used and through self-reported items. The factor of certainty in pronoun use was measured by the rate at which first person singular, second person, and third person pronouns were used. According to the two-factor model, I predicted that (1) people who sought advice or problem solving would have relatively less emotional involvement and be self-uncertain, (2) people who sought agreement would have

relatively less emotional involvement and be self-certain, (3) people who desired to vent or be listened to would have relatively more emotional involvement and be self-certain, and (4) people who sought sympathy would have relatively more emotional involvement and be self-uncertain.

METHOD

Participants

Two hundred and seventy-two participants (149 females) were recruited from MTurk. The ages of participants in Study 1 ranged from 18 to 74 ($M_{\text{age}} = 34.9$, $S.D. = 12.5$). Eighty-five percent of participants in this study were from the United States, and ninety-two percent of participants were English native speakers. Participants were paid fifty cents for completing Study 1.

Procedure

Participants signed up for this study on the MTurk board. They were asked to report demographic information first. Then participants followed the instructions for writing a complaint about one recent negative event (see Appendix B). After finishing the complaint, participants identified their complaint target, topic, and expectation in three multiple-choice questions and three self-reported items about certainty of being understood and emotional involvement. Finally, participants were debriefed and thanked.

RESULTS

Study 1 investigated the characteristics of everyday complaints through self-reported items about the complaint target, topic, and expectation. Since the data for complaint target, topic, and expectation were nominal, they were analyzed to examine

gender difference in chi-square tests. With regard to various complaints, they were also analyzed to examine the two factor model of complaint expression.

To whom do we complain?

The frequencies and percentages of complaint targets are shown in Table 7. A two-way chi-square was used to examine gender difference in complaint targets. The results showed a gender difference in complaint target, $\chi^2(8) = 17.77, p = .02$. A post hoc comparison indicated that males complained to service providers more than females, $p = .06$. Based on the frequencies of complaint targets across gender, the top four frequent categories were anyone (56%), other (15%), service provider (9%), and friend or acquaintance (10%). These four categories accounted for almost 90% of all complaint targets and replicated the top four categories of complaint targets in the pilot study. In addition, half of participants had no specific target to complaint to, suggesting that most people just wanted a listener, which was parallel to the findings in the pilot study.

The occurrence frequencies of complaint topics in Study 1 were similar to the findings in the pilot study. Friends and service providers were the common targets people considered complaining to. In addition, approximately half of participants have no specific target to complain, replicating the findings in the pilot study.

<i>Complaint target</i>	Male	Female
Anyone	59 (48.0%)	93 (62.4%)
Other	25 (20.0%)	17 (11.4%)
Service provider	16 (13.6%)	9 (6.0%)
Friend or acquaintance	14 (11.2%)	12 (8.1%)
Boy or girl friend	3 (2.4%)	9 (5.9%)
Siblings	1 (0.8%)	0 (0.0%)
Parents	1 (0.8%)	6 (3.9%)
Spouse	3 (2.4%)	3 (2.0%)
God	1 (0.8%)	0 (0.0%)
Total	123 (100%)	149 (100%)

Table 7: Frequencies and Percentages of Complaint Targets in Gender for Study 1

What do we complain about?

In the pilot study, females complained about family or friend issues more than males. Is it a stable gender difference in complaining behavior? In this section, the gender difference was tested again to see if it was a stable phenomenon. The frequencies and percentages of complaint topics are shown in Table 8. A two-way chi-square was tested. The results showed a gender difference in complaint topics, $\chi^2(7) = 20.16$, $p < .01$. A post hoc comparison indicated that females complained about family or friend issues more than males, $p < .01$, which replicated the gender difference in complaint topics in the pilot study. Based on the frequencies of complaint topics, the top four categories were job/financial issues/career (20.2%), personal affairs (15.1%), family/friends (10.3%), and

consumer behavior (10.7%). These four categories accounted for approximately 60% of all complaint targets, and again, replicated the top four categories of complaint topics in the pilot study.

<i>Complaint topic</i>	Male	Female
Job/financial issues/ career	32 (26.0%)	23 (15.4%)
Personal affairs	15 (12.2%)	26 (17.4%)
Family/friends	4 (3.3%)	24 (16.1%)
Consumer behavior	13 (10.6%)	16 (10.7%)
Attitude	10 (8.1%)	13 (8.7%)
Politics	4 (3.3%)	2 (1.3%)
Acquaintance	1 (0.8%)	5 (3.4%)
Other	44 (35.8%)	40 (26.8%)
Total	123 (100%)	149 (100%)

Table 8: Frequencies and Percentages of Complaint Topics in Gender for Study 1

The occurrence frequencies did not show the gender difference, except for the issues about family or friends. It might suggest that females care more about interpersonal issues than males.

What do we expect from others when we complain?

Do people always hold the same expectation in complaints? Or do they have different expectations during complaining? To answer this question, this section investigated the occurrence frequencies in complaint expectations. The frequencies and percentages of complaint expectations are shown in Table 9. Based on the frequencies of complaint expectations across gender, 15.8% of people sought advice, 16.5% of people

sought validation or justice, 48.2% of people wanted to vent or be listened to, and 19.5% of people sought sympathy. A one-way chi-square was performed to examine if people had no preference in expectations when complaining. The result showed a significant effect, $\chi^2(3) = 79.32, p < .001$, suggesting that people were more likely to vent and be listened to when complaining. A two-way chi-square was performed to examine if there was a gender difference in complaint expectations. The result suggested no gender difference, $\chi^2(3) = 1.86, p = .60$.

In order to examine if people's complaint expectation was affected by complaint topic, the frequencies of complaint expectations are presented by complaint topic in Table 10. A two-way chi-square was performed to determine if the complaint expectation was related to complaint topics. The result showed no effect, $\chi^2(21) = 21.61, p = .42$. This suggested that the complaint expectation was independent of the complaint topics.

<i>Complaint Expectation</i>	Male	Female	N
Seek advice or problem solving	20 (16.3%)	23 (15.4%)	43
Seek agreement or justice	24 (19.5%)	21 (14.1%)	45
Desire to vent and be listened to	57 (46.3%)	74 (49.7%)	131
Seek sympathy	22 (17.9%)	31 (20.8%)	53
Total	123 (100%)	149 (100%)	272

Table 9: Frequencies and Percentages of Complaint Expectations in Gender

<i>Complaint Topic</i>	<i>N</i>	<i>Advice</i>	<i>Agreement</i>	<i>Be Listened</i>	<i>Sympathy</i>
Job/financial issues/ career	55	9	8	25	13
Personal affairs	41	5	6	24	6
Consumer behavior	29	3	6	13	7
Family/friends	28	2	4	17	5
Attitude	23	6	6	7	4
Politics	6	2	3	0	1
Acquaintance	6	0	1	4	1
Other	84	16	11	41	16
Total	272	43	45	131	53

Table 10: Frequencies of Complaint Expectations by Topics in Study 1 (Advice = Seek advice or problem solving; Agreement = Seek agreement or justice; Be listened = Desire to vent or be listened to; Sympathy = Seek sympathy)

To briefly summarize, participants preferred to vent or be listened to over other expectations when complaining. There was no gender difference among the four types of complaint expectations. Furthermore, the types of expectations were not related to complaint topics.

Data Preparation for Language Analyses

The purpose of this language analysis was to distinguish the linguistic markers for examining the two-factor model of complaint expression. The primary variable, complaint expectation, was measured by a multiple-choice question, which was a nominal variable. Therefore, there were two strategies for analysis. The first strategy was

to spread the nominal variable to four dichotomous variables (1 = yes, 0 = no) and conduct correlational analyses to be consistent with the analyses in the pilot study. This strategy focused on comparing one particular complaint expectation to the other three. The second strategy was to conduct one-way ANOVAs. This strategy focused on comparing means among the four complaint expectations in language use. Since the purpose of this language analysis was to distinguish the linguistic markers, the second analysis strategy was adopted. The correlational analyses for the first strategy are reported in Appendix C as supplementary materials.

Language Analyses

The complaint texts were submitted to LIWC to analyze. The LIWC variables were managed with the same procedure in the pilot study. The factor of certainty was measured by the rates of certainty words and pronoun use, and the factor of emotional involvement was measured by the rates of negative emotion words. The language variables were submitted to one-way ANOVAs to examine the distinctive language markers among the four complaint expectations. Since the sample sizes in the four complaint expectations were unequal, tests for homogeneity of variance were conducted. There was no violation for homogeneity of variance.

The ANOVA results are shown in Table 11. On the average word count, people who sought agreement from their complaints used more words to address their issues, compared to people who had other complaint expectations. No significant difference emerged the use of certainty words and certainty in pronoun use among the four complaint expectations. One marginally significant effect emerged in second person

pronoun use, indicating that people who sought advice from their complaints used more second person pronouns than people who held other complaint expectations. This effect on second person pronouns replicated the finding about the complaint expectation of seeking advice in the pilot study, although the second person pronoun was a category with small means. With regard to negative emotion, people who were eager to be listened to in their complaints used more negative emotion words than people who sought advice or sympathy, supporting the third hypothesis that people who desired to vent or be listened to were relatively emotional in their complaints.

Variable	Advice	Agreement	Be Listened	Sympathy	<i>F</i>	p-value
Word Count	163 _a (73.95)	217 _b (103.62)	189 _a (75.0)	187 _a (83.3)	3.34	.02
WPS	21.7 (12.4)	18.9 (6.10)	19.8 (9.98)	19.6 (20.1)	0.41	.75
Certainty Words	1.42 (1.34)	1.27 (0.90)	1.45 (1.18)	1.28 (1.23)	0.43	.73
Certainty	-3.56 (4.60)	-1.82 (4.33)	-2.10 (5.43)	-3.07 (5.46)	1.35	.26

Table 11: Mean Numbers of Language Variables by Complaint Expectations (Standard deviations appear in parentheses below means. Means with differing subscripts within rows are significantly different at the $p < .05$ based on LSD post hoc paired comparisons. Advice = Seek advice or problem solving; Agreement = Seek agreement or justice; Be listened = Desire to vent or be listened to; Sympathy = Seek sympathy; WPS = Word count/sentence)

We	0.76 (1.41)	1.02 (1.71)	0.83 (1.74)	0.77 (1.31)	0.27	.85
You	0.86 _{ab} (1.50)	0.50 _{bc} (0.77)	0.36 _c (0.72)	0.45 _c (1.72)	2.16	.09
Shehe	2.06 (2.63)	2.54 (3.19)	2.72 (3.22)	2.08 (2.93)	0.84	.47
They	0.91 (1.48)	1.38 (1.50)	1.45 (1.87)	1.78 (1.98)	1.92	.13
I	8.15 (3.58)	7.27 (3.23)	7.45 (3.35)	8.16 (3.27)	1.06	.37
Negative Emotion	2.44 _b (1.61)	2.86 (1.61)	3.04 _a (1.78)	2.54 _b (1.46)	2.01	.11
Certainty of being understood	4.67 _a (2.02)	4.07 _{ab} (2.10)	3.75 _b (2.01)	4.28 _{ab} (1.77)	2.67	.05
Self-reported Emotionality	5.31 (1.12)	5.43 (0.96)	5.36 (1.08)	5.23 (1.32)	0.31	.82

Table 11 (continued)

This section of language analyses examined certainty and negative motion. There was no result of certainty in language use. However, there was a finding on the use of negative emotion words. One explanation is that participants might use negative emotion words to signal a certain type of complaint expectation, which was the desire to vent or be listened to.

Analysis for Self-reported Items

There were three primary variables in 7-point self-reported measures. One item measured participants' certainty of being understood accurately about their complaint expectations by listeners. Two items used to measure emotionality were combined for the variable self-reported emotionality. The self-reported emotionality was validated by language variables. The self-reported emotionality was not related to the rates of negative emotion words ($r = .04, p = .50$) but significantly related to the rate of sadness words ($r = .10, p = .10$) swear words ($r = .13, p = .04$). The correlational results suggested that the self-reported emotionality was valid for examining the factor of emotional involvement. The two self-reported variables were submitted to one-way ANOVAs for analysis, and the results are shown in Table 11. Participants who sought advice reported more certainty of being understood in their complaints than people who wanted to vent and be listened to. No difference emerged on emotionality among the four complaint expectations.

Contrast Comparisons in Language Use and Self-reported Items

The model of complaint expression was comprised of two factors: certainty and emotional involvement. However, in the language analysis and analysis of self-reported items, the four complaint expectations were compared in ANOVAs. In this analysis, the four complaint expectations were conducted in contrast comparisons by language use and self-reported items. The purpose of the contrast comparisons was to directly test the two-factor model. According to the model, the expectation of seeking agreement and the expectation of being listened to were classified as high certainty conditions, whereas the expectation of seeking advice and the expectation of seeking sympathy were classified as

low certainty conditions. The two conditions were compared on the basis of language use and a self-reported item for examining certainty. There was no violation of the equal variance assumption. The results are shown in Table 12. People in the low certainty condition expressed less certainty in pronoun use, compared to people in the high certainty condition. With regard to emotional involvement, the four complaint expectation groups were classified in high versus low emotional involvement condition according to the two-factor model. There was no violation of the equal variance assumption. The results showed no difference between high versus low emotional involvement conditions on the two emotional measures.

	High Certainty (<i>N</i> = 176)	Low Certainty (<i>N</i> = 96)	<i>t</i>	<i>p</i>
Certainty Words	1.41 (1.12)	1.35 (1.28)	-0.41	.69
Certainty in Pronoun Use	-2.03 (5.16)	-3.29 (5.07)	-1.94	.05
	High Emotional Involvement (<i>N</i> = 184)	Low Emotional Involvement (<i>N</i> = 88)		
Negative Emotion	2.89 (1.70)	2.65 (1.61)	1.10	.27
Self-reported Emotionality	5.32 (1.15)	5.38 (1.04)	- 0.36	.72

Table 12: Mean Numbers of Language Variables by Focus of Attention and Emotional Involvement (Standard deviations appear in parentheses next to means.)

DISCUSSION

The two-factor model of complaint expression was composed of certainty and emotional involvement. The two factors play important roles in our daily conversations and interpersonal behaviors. The certainty refers to whether people have a clear answer of their feelings or thoughts, whereas the emotional involvement refers to how emotionally we act when talking to other people. In some circumstances, such as complaints, these two factors can be useful for understanding interpersonal behaviors.

Study 1 was different from the pilot study on the measure of complaint expectations. Study 1 adopted the multiple-choice item, whereas the pilot study used open-ended questions. The advantage of the multiple-choice item was to lead people's focus on the four major complaint expectations. However, the use of multiple-choice items could not measure other minor complaint expectations, such as encouragement. Fortunately, according to the pilot study, only eight percent of people sought minor expectations beyond the major four. This suggested that when sample size was large enough, the fact that people who had minor expectations were presented with a multiple-choice item did not influence the final results.

With regard to language use, the language analysis in Study 1 distinguished the differences between complaint expectations on emotional involvement but not on certainty in pronoun use. The difference in certainty in pronoun use was later found in a contrast comparison, which was supportive of the two-factor model. On emotional involvement, the differences between complaint expectations were only found in language use, not on self-reported items. Although the results distinguishing the four

complaint expectations were only marginally significant on the use of negative emotion words, it is important to note that people who sought someone to vent or listen to them when complaining were relatively more emotional. Interestingly, these people used more negative emotional words to reveal their mood but did not acknowledge it in their self-report.

There is a common gender stereotype that females are more likely to complain than males. This gender stereotype, in certain circumstances, is true. In Study 1, females did not complain more than males in general. However, females complained more about their family or friends than males. This was also found in the pilot study, suggesting a reliable phenomenon. It is possible that women pay more attention to interpersonal or close relationships than men, thus they use complaints to connect to their relationship partners. Some studies have indicated that women are more sensitive to interpersonal meanings than men, and the society expects women to be more responsible for intimacy (Tannen, 1990; Wood, 2009). This gender explanation in societal meanings may account for the phenomenon that women complain more to their family members or close friends than men.

In Study 1, almost a half of participants expected to have someone to vent or listen to them when complaining. However, only twenty percent of participants in the pilot study expected to vent or be listened to. Why did more people want to be listened to in Study 1? It is possible that there was an association between having someone to vent and the idea of complaining. When people saw different expectations in a multiple-choice question, the association encouraged people to select the option of venting or being

listened to. However, in the pilot study, the complaint expectation was measured by an open-ended question. There was no visual cue to link with the association; therefore, participants responded based on their inner thoughts. Alternatively, it is possible that the percentage of people with the expectation of being listened to in the pilot study was underestimated. Misunderstanding the complaint expectations by judges or ambiguous complaints with unclear expectations could result in the underestimated percentage of expectations of being listened to in the pilot study.

Overall, Study 1 examined the practicability of the two-factor model of complaint expression and replicated the findings in the pilot study. Study 1 tested the model in everyday complaints, which provides good ecological and external validity. In order to ensure the reliability of the two-factor model, it is important to test the boundary of the two-factor model in various methods. Therefore, the two-factor model was tested through experimental manipulation in Study 2.

Study 2: Manipulation of Complaint Expectations in Language Use

Study 1 focused on the language markers related to complaints with different expectations by asking participants to complain about a recent negative event. The purpose of Study 2 was to replicate the findings in Study 1 by manipulating complaint expectations. In Study 2, participants were instructed to read an imaginative scenario and asked to write complaints to a close friend as the actor in the scenario in five conditions. The five conditions, including advice, sympathy, validation, venting, and control condition were conducted as a between-subjects design. The goal of Study 2 was to examine the two-factor model in an experimental design in language use.

Again, language use in complaints was measured for the two factors of emotional involvement and certainty. The four primary predictions were (1) people who sought advice or problem solving would have less emotional involvement and certainty, (2) people who sought agreement would have less emotional involvement and more certainty, (3) people who desired to vent and be listened to would have more emotional involvement and certainty, and (4) people who sought sympathy would have more emotional involvement and less certainty.

METHOD

Participants

Two hundred and forty-seven participants (120 females) were recruited from Amazon's Mechanical Turk (MTurk). The ages of participants in Study 2 ranged from 18 to 68 ($M_{\text{age}} = 34.6$, $S.D. = 13.1$). Eighty-seven percent of participants in this study were

from the United States, and ninety-one percent of participants were English native speakers. Participants were paid fifty cents for completing Study 2.

Procedure

Participants signed up for this study on the MTurk board. They were asked to report demographic information first and then were presented with the following instructions:

In this study, you will read a story about Taylor. Your job is to imagine you are Taylor, who wants to complain to an old friend about a company's policy. You will be given a situation to complain about as Taylor. In the situation, you will be given a specific request for an old friend. Please write a complaint to your friend to satisfy the request as best as you can.

Please imagine you are Taylor, whose gender is the same as yours. Taylor is frustrated with her (his) job. There is a new project in her (his) company. Instead of assigning the work to Taylor, her (his) department outsources the work to an outside agency. It is frustrating for Taylor because she (he) wants to work on the project. So far, Taylor is quite new in her (his) position, and hasn't had much experience in her (his) company.

After reading the instructions, participants were randomly assigned to one of the five conditions. Participants were asked to complain to an old friend about the company's policy in the role of Taylor. In the advice condition, they were asked to complain for the purpose of seeking advice or a solution from their friends; in the agreement condition, they were asked to complain for the purpose of seeking agreement from their friends; in

the listening condition, they were asked to complain for the purpose of having their friends only listen to them; in the sympathy condition, they were asked to complain for the purpose of being sympathized with by their friends; and in the control condition, they were asked to complain without any assigned expectation (see Appendix D). After the complaint writing assignment, participants received two questions about the complaint. The first question measured their certainty that their anonymous reader would understand their complaint expectation. The second question was used to identify their real expectation in the role of Taylor. Finally, participants were debriefed and thanked.

RESULTS

Study 2 investigated the language markers for various complaint expectations through manipulated instructions in five conditions. The analyses focused on four parts. First, a preliminary analysis was conducted to examine whether the four experimental conditions were different from the control condition. Second, a language analysis was conducted on the four experimental conditions. Third, a contrast comparison was conducted to examine differences in the level of emotional involvement and certainty. Last, an exploratory analysis was tested for specific punctuation use in the four experimental conditions. All complaint texts were submitted to LIWC for analysis. The LIWC variables were managed using the same procedure as in the pilot study.

Preliminary Analysis

Participants in the control condition had no assigned complaint expectation; therefore, they made complaints in a natural way. The purpose of the preliminary analysis was to examine whether participants in the control condition had a tendency to adopt

specific complaint expectations. Among the 50 participants in the control condition, 30% sought advice or a solution, 24% sought agreement, 24% preferred to have someone to vent, and 22% preferred to receive sympathy. A one-way chi-square test was performed, and no tendency of specific complaint expectations emerged in the control condition, $\chi^2(3) = 0.72, p = 0.87$. This suggested that the complaint expectation in the control condition was a combination of the major four expectations. Thus, the control condition should show no difference in language use when compared to the combined experimental condition, which included the four experimental conditions.

Independent t-tests were performed to examine the differences between the combined experimental condition and the control condition, and there was no violation of homogeneity of variance to the unequal sample sizes. The results are shown in Table 13. There was a significant effect on the use of second person pronoun. The effect on certainty in language was marginally significant. It suggested that people who complained with the assigned expectation were slightly more certain in their complaints than people who complained in a natural way. Overall, the language patterns in the combined experimental condition and the control condition were almost identical.

Variable	Combined Experimental Condition (<i>N</i> = 197)	Control Condition (<i>N</i> = 50)	<i>t</i>	p-value
Word Count	151 (57.3)	153 (68.0)	-0.15	.88
WPS	18.1 (8.18)	16.7 (5.78)	1.16	.25
Certainty Words	1.22 (0.97)	1.35 (1.18)	-0.80	.43
Certainty	-6.55 (4.89)	-7.96 (5.10)	1.81	.07
We	0.33 (0.70)	0.36 (1.00)	-0.24	.81
You	1.25 (1.59)	0.50 (0.71)	3.23	< .01
Shehe	0.41 (1.21)	0.54 (1.60)	-0.64	.52
They	2.23 (1.90)	2.11 (1.56)	0.43	.67
I	10.8 (3.40)	11.5 (3.89)	-1.27	.21
Negative Emotion	1.62 (1.40)	1.63 (1.07)	-0.05	.96

Table 13: Mean Numbers of Language Variables by the Combined Experimental Condition and the Control condition (Standard deviations appear in parentheses next to means.)

Language Analysis

The factors of certainty and emotional involvement were measured by the use of personal pronouns and negative emotion words respectively. The language analysis could be conducted in the ANOVA or through a correlational strategy. Since the purpose of this language analysis was to compare the four experimental conditions on LIWC variables,

the ANOVA strategy was adopted. The correlational results are reported in Appendix E as supplemental materials.

The language variables were submitted to one-way ANOVAs to compare the differences between the four expectation conditions. The results are showed in Table 14. There is a significant effect on word count, and the LSD post-hoc comparison suggested that people in the sympathy condition used fewer words to describe the complaints than people in other three conditions. There was also a significant effect on words per sentence variable, and the LSD post-hoc comparison suggested that people in the advice condition used more words per sentence to describe the complaints than people in other three conditions. No effect on certainty or negative emotion emerged.

Variable	Advice (<i>N</i> = 49)	Agreement (<i>N</i> = 48)	Be Listened (<i>N</i> = 50)	Sympathy (<i>N</i> = 50)	F	p-value
Word Count	158 _a (65.5)	158 _a (47.9)	159 _a (51.2)	131 _a (59.4)	2.75	.04
Words per Sentence	20.4 _a (10.2)	17.5 _b (8.29)	15.9 _b (4.76)	18.6 _{ab} (8.19)	2.66	.05
Certainty Words	1.19 (1.03)	1.36 (0.99)	1.24 (1.00)	1.13 (0.87)	0.50	.69
Certainty	-6.21 (5.53)	-6.57 (4.28)	-6.68 (5.24)	-6.71 (4.50)	0.11	.96
We	0.27 (0.56)	0.32 (0.81)	0.34 (0.54)	0.38 (0.86)	0.19	.90
You	1.53 (1.58)	1.33 (1.85)	1.25 (1.57)	0.89 (1.31)	1.40	.24
Shehe	0.68 (1.84)	0.28 (0.69)	0.37 (1.05)	0.30 (0.92)	1.22	.30
They	2.08 (2.32)	2.37 (1.70)	1.97 (1.69)	2.51 (1.83)	0.85	.47
I	10.8 (3.43)	10.9 (3.10)	10.61 (3.62)	10.8 (3.50)	0.11	.96
Negative Emotion	1.48 (1.13)	1.43 (1.11)	1.57 (1.47)	2.00 (1.76)	1.67	.18

Table 14: Mean Numbers of Language Variables by the Four Experimental Conditions
(Standard deviations appear in parentheses next to means.)

Contrast Comparisons in Language Use

The four experimental conditions were divided by the two dimensions of the two-factor model to examine the level of certainty and emotional involvement. Following the same procedure as in Study 1, the advice and sympathy conditions were classified as the low certainty groups, whereas the agreement and the listening conditions were classified as the high certainty groups. The rates of the certainty words and certainty in pronoun use were submitted to two independent *t* tests. The results are showed in Table 15. No effect emerged on certainty words and certainty in pronoun use. With regard to emotional involvement, the sympathy condition and the listening condition were classified as high emotional involvement groups, whereas the advice condition and the agreement condition were classified as low emotional involvement groups. The rates of negative emotion words were submitted to an independent *t* test. No effect emerged on negative emotion words.

	High certainty (<i>N</i> = 98)	Low certainty (<i>N</i> = 99)	<i>t</i>	<i>p</i>
Certainty Words	1.30 (0.99)	1.16 (0.95)	1.03	.30
Certainty in Pronoun use	-6.63 (4.77)	-6.47 (5.02)	-0.23	.20
	High Emotional involvement (<i>N</i> = 100)	Low Emotional involvement (<i>N</i> = 97)		
Negative Emotion	1.78 (1.62)	1.46 (1.11)	1.63	.11

Table 15: Mean Numbers of Language Variables by certainty and Emotional involvement in Study 2 (Standard deviations appear in parentheses next to means.)

Additional Analysis in Specific Punctuation Use

Since Study 2 was a manipulation study in writing, participants might use punctuation to fit different assigned complaint expectations. For instance, a person could use question marks (e.g., what would you do if you were me?) to emphasize the request for advice or use exclamation marks to reveal the strength of emotion (e.g., this is unfair!) in writing. Interestingly, question marks and exclamation marks are commonly used in punctuation and can convey information about the speaker. Therefore, it is worthwhile to examine whether people who had specific assigned complaint expectations used more question marks or exclamation marks. The two punctuation categories were submitted to ANOVAs to examine the differences between the four major expectations. The results are showed in Table 16. There was a significant effect on the use of question Marks. The LSD post-hoc comparison indicated that people in the advice condition used more question marks than people in other three conditions. No effect emerged on the use of exclamation.

Variable	Advice	Agreement	Be Listened	Sympathy	F	p-value
Q-Mark	1.40 _a (1.80)	0.92 _b (0.91)	0.93 _b (1.09)	0.65 _b (0.93)	3.19	.03
Exclamation	0.28 (0.62)	0.33 (0.74)	0.61 (1.34)	0.39 (0.74)	1.35	.26

Table 16: Mean Numbers of Language Variables by Complaint Expectations (Standard deviations appear in parentheses below means. Means with differing subscripts within rows are significantly different at the $p < .05$ based on LSD post hoc paired comparisons.)

DISCUSSION

The two-factor model of complaint expression was composed of certainty and emotional involvement. The pilot study and Study 1 tested the two-factor model in a natural setting in which participants were instructed to complain about negative events. Unlike the pilot study and Study 1, Study 2 examined the two-factor model in language use through an experimental setting. More importantly, participants in the pilot and Study 1 recalled their complaint expectations after complaining; however, participants in Study 2 received the assigned complaint expectations before they complained. This strategy of the experimental manipulation could reflect how people evaluate the meanings of the four expectations because they have to adjust themselves to fit the assigned expectations.

Study 2 showed two interesting findings in language use. First, participants in the control condition without assigned expectations naturally selected different expectations, and the frequencies of selected expectations were similar. In other words, the four expectations are the major issues that people are generally concerned with when they

complain. In addition, people in the control condition are slightly less self-certain compared to people in the experimental condition. It is possible that people were uncertain as to the contents of their complaints, thus they revealed less certainty. On the contrary, people in the experimental condition had clear complaint expectations; therefore, they were relatively more certain.

Second, in terms of the two factors in the model, the factors of certainty and emotional involvement were not supported in Study 2. The possible explanation for the null effect on certainty and emotional involvement is experimental perspective. Participants in Study 2 received a hypothetical scenario and were asked to write a complaint in the role of the actor. The fact that people are uncertain about themselves does not mean that they are uncertain about the role of the actor in complaints. Thus, the experimental manipulation may not be an appropriate tool for testing certainty. In addition, if participants could not involve in the role, they might only reveal the baseline of emotional involvement. The idea of certainty and emotional involvement should be directly targeted in complaints instead of being targeted in a hypothetical situation.

Although the two-factor model was not fully supported by this manipulation experiment, the findings in Study 2 still highlighted the adjustment of language use. If people change cognitive processes, changes in language use can be expected (Beukeboom & Jong, 2008). This is particularly important for complaining behaviors. When people complain to other people, knowing their inner thoughts or expectations can guide people to complain in an understandable way. For listeners, to what degree can listeners identify the complaint expectations and respond to complainers in an appropriate

way? Which personality traits can determine the accuracy of identifying complaint expectations? Study 3 turned to the perspective of listeners and examined these questions for the purpose of understanding more about listeners.

STUDY 3: Judges' Accuracy in Complaint Expectations

Study 1 and 2 examined the two-factor model of complaint expression in language use and self-report. The two studies purely focused on how speakers voice their dissatisfaction or frustration in complaints. Since complaints in daily conversations require involvements from both speakers and listeners, an important next step is to determine whether listeners accurately perceive the expectation from a complaint. Therefore, Study 3 focused on listeners and examined if they could identify the accurate expectations behind complaints.

There were two factors that might affect people's accuracy in deciphering complaint expectations: overconfidence and personality traits. Overconfidence has been a concern in decision-making research for several decades. In some circumstances, people become overconfident. For example, people who have more knowledge about a wager are generally overconfident about their decision to make that wager (Heath & Tversky, 1991). In fact, the overconfidence effect has been widely found in personal and social predictions (Griffin, Dunning, Ross, 1990). One study further tested the idea of overconfidence in communication (Kruger, Epley, Parker, & Ng, 2005) and found that people believe they can communicate well without gesture and intonation over e-mail. Importantly, people do not have any improvement in overconfidence when in face-to-face communication, although they have more facial emotions or gestures on which to base decisions (e.g., Guzzo & Dickson, 1996). This suggested that in daily communication, whether face-to-face or online, people generally have overconfidence in their decisions. The overconfidence effect would be apparent in complaint expectations in this study.

In addition, the ability to perceive, assess, or identify one's emotion is an important issue in communication. People who are incapable of understanding or identifying other peoples' emotions may misunderstand an expectation behind a complaint. In this sense, personality traits would be the factor that affects people's accuracy in determining complaint expectations. What is the possible factor that determines the ability to identify emotions? One possibility is emotional quotient (EQ). The definition of EQ is "the ability to monitor one's own and others' emotions, to discriminate among them, and to use the information to guide one's thinking and actions" (Salovey & Mayer, 1990, p. 189). By definition, if people have low EQ, they cannot discriminate among emotions, including dissatisfaction or frustration reflected in complaints. Therefore, personality measures were selected in this study to determine if the EQ-related variables are associated with the accuracy of identifying complaint expectations. The EQ-related measures adopted in this study were Big Five personality traits, social skills, and self-esteem. Past literature has shown that the EQ scale is related to Big Five personality traits (e.g., Brackett & Mayer, 2003; Schutte et al., 1998), social skills (e.g., Mayer & Salovey, 1997; Spence, Oades, & Caputi, 2004), and self-esteem (e.g., Fernández-Berrocal, Alcaide, Extremera, & Pizarro, 2006). Thus, the three measures were utilized in this study. The EQ scale was also used in this study.

Study 3 selected 16 complaint texts labeled with expectations by participants in a multiple-choice format from Study 1 and presented those complaints to participants to determine whether they could identify the reported expectations and respond to the complainers appropriately. The purposes of Study 3 were to examine how well people

could accurately identify complaint expectations and if people's personality traits affected their perception of complaint expectations.

METHOD

Participants

Two hundred and four participants (97 females) were recruited from MTurk. The ages of participants in Study 3 ranged from 19 to 68 ($M_{\text{age}} = 35.3$, $S.D. = 11.8$). Eighty-one percent of participants in this study were from the United States, and ninety percent of participants are English native speakers. Participants were paid fifty cents for completing Study 3.

Materials

Complaints with labeled expectations in Study 1 were adopted as materials in this study. The selected criterion is the frequency of complaints, which is shown in Table 8. First, the top two most frequent complaint topics were selected, including job or financial issues and personal affairs. These two complaint topics are the most common topics people usually complain about. Next, sixteen complaint texts were selected from Study 1. Eight complaints were selected from each complaint topic. Four complaint texts were selected from each complaint expectation. Half of complaint texts were written by males, the other half by females. Finally, the sixteen complaints were selected to yield a 2 by 4 by 2 (topic \times expectation \times gender) within-subjects design (see Appendix F). The average word count for the sixteen texts is 207.3 ($S.D. = 76.03$).

Procedure and Measures

MTurk participants were presented with a questionnaire and a complaint assessment task pertaining to 16 multiple choice questions in this study. Participants were asked to report demographic information first. After that, they were randomly assigned to two conditions. One half of participants received the questionnaire section first; the remainder received the complaint assessment task first. In the questionnaire section, participants completed five scales, including the ten-item personality inventory (TIPI; Gosling, Rentfrow, & Swann, 2003), the 12-item social skills inventory (SSI), the single item self-esteem measure (Robins, Hendin, Trzesniewski, 2001), four items from the Autism-Spectrum Quotient scale (AQ; Baron-Cohen et al., 2001), and ten items from the Empathizing Quotient and Systemizing Quotient scale (EQSQ; Baron-Cohen, Richler, Bisarya, Gurunathan, & Wheelwright, 2003). There are fifty items in the Autism Spectrum Quotient scale and sixty items in the original EQSQ. Due to time constraints and participants' cognitive load, four items were selected from the AQ scale, and ten items were selected from the EQSQ scale. Two of the four selected AQ items (item 13 and 36) were from the social skill subscale, and the other two of the four selected AQ items (item 8 and 14) were from the imagination subscale. Five items with top factor loadings from the empathy quotient subscale (item 14, 22, 28, 34, and 36) and five with top factor loadings from the systemizing quotient subscale (item 3, 8, 10, 12, and 22) were also selected in this study based on the previous results of factor analysis (Wakabayashi et al., 2006). The sequence of the five scales was counter-balanced.

In the complaint assessment task, the sixteen complaint texts were randomly presented to participants. In each complaint text, participants were asked to identify the

original labeled expectation, how they would behaviorally respond in correspondence with the complainer, and how certain they were about the accuracy of their answers. Finally, participants were debriefed and thanked.

Data Preparation

Since each of the 16 multiple choice questions had their own complaint expectations that were identified by the authors in Study 1, participants' responses in this study were matched with the original complaint expectations and transformed into binary variables. If participants' responses were identical with the original complaint expectation, then the response was coded as 1. Otherwise, the response was coded as 0. With this step of data transformation, 16 dummy variables for the 16 complaint texts were produced. An average mean of the accuracy of complaint expectations, ranging from 0 to 1, was calculated based on the 16 dummy variables. The average means of the accuracy of the corresponding responses were also calculated by the four complaint expectations.

Moreover, participants rated how certainty they were about the accuracy of their answer in a 7-point scale. Their self-report rating results were linear transformed to a 1-point scale, ranging from 0 to 1. This self-report rating was used to compare to the mean of the accuracy of complaint expectations for answering the overconfidence question.

RESULTS

Study 3 examined whether people have overconfidence in identifying real complaint expectations and responding to the complainer in an appropriate way. In addition, Study 3 also investigated personality traits that are associated with accuracy in

identifying complaint expectations. Therefore, the analyses in Study 3 primarily focused on the accuracy in identifying complaint expectations, the corresponding responses to complaint expectations, the certainty of accuracy of identifying complaint expectations, and the personality traits that may be related to accuracy and corresponding responses.

Accuracy of Complaint Expectations

Did people have different levels of accuracy in determining complaint expectations when perceiving the four types of expectation? In other words, which type of complaint expectation was relatively easy to identify? To answer this question, the 16 dummy variables for the 16 complaint texts were computed for the means of the accuracy by complaint expectations. A within-subjects ANOVA was conducted to assess the accuracy of complaint expectations. The sphericity assumption was not met, and the Huynh-Feldt correction was applied to adjust degrees of freedom. The means for accuracy of complaint expectations are showed in Table 17. For the accuracy of complaint expectations, the effect was significant, $F(2.89, 586.19) = 15.58, p < .001$. An LSD post hoc analysis showed that the means for the accuracy of being listened to and seeking sympathy were greater than the means for the accuracy of seeking advice and agreement.

<i>Complaint Expectation</i>	Mean (S.D.)
Seek advice or problem solving	0.30 (0.25)
Seek agreement	0.25 (0.24)
Desire to vent and be listened to	0.38 (0.25)
Seek sympathy	0.40 (0.24)
Total	0.33 (0.11)

Table 17: Mean Numbers from Dummy Variables in Accuracy by Complaint Expectations (Standard deviations appear in parentheses next to means.)

Corresponding Responses to the Complainers

Since people sought different feedback from listeners, it was important to know if people responded to the complainers in accordance with the complaint expectations. For example, giving advice is a correct response for people who seek advice, but it is a wrong response for people who seek sympathy. A with-subjects ANOVA was conducted to assess the corresponding response. The sphericity assumption was not met, and the Huynh-Feldt correction was applied. The means for the accuracy of corresponding responses are showed in Table 18. The effect for the types of corresponding responses was significant, $F(2.92, 592.80) = 17.91, p < .001$. An LSD post hoc analysis showed that the means for the accuracy of corresponding response on advice and being listened conditions were greater than the accuracy of corresponding response on agreement and sympathy conditions. It suggested that people could respond to complainers in a more accurate way when the complainers sought advice or someone to listen to them than seeking agreement or sympathy.

<i>Corresponding Response</i>	Male
Advice (come up with advice or a solution for him/her)	0.40 (0.25)
Agreement (tell him/her, “I agree with you”)	0.29 (0.24)
Listening (keep quiet and let him/her vent)	0.40 (0.26)
Sympathy (tell him/her, “I know how you feel”)	0.26 (0.21)
Total	0.34 (0.11)

Table 18: Mean Numbers in Accuracy of Corresponding Responses (Standard deviations appear in parentheses next to means.)

Associations and Differences between Complaint Expectations and Corresponding Response to the Complainers

Participants showed smaller means for the accuracy of complaint expectation on the seeking advice condition than the means on other conditions and smaller means for the corresponding response on the sympathy condition than other conditions. Those small means suggested that participants had poor accuracy on certain types of expectations. In terms of the means for the accuracy, the difference between identified expectation and response raised a question: did people respond to the complainers in a way that matches the complaint expectation they identify? If not, in which condition did people change their response?

In order to answer these questions, the means for the accuracy of identifying complaint expectations were correlated with the means for the accuracy of corresponding responses by the four complaint expectations. The correlational results are showed in

Table 19. The associations between complaint expectation and corresponding response were all significant, $ps < .05$. According to the criteria on effect size (Cohen, 1992), the associations on advice, agreement, and listening conditions were large sizes ($r > .50$), but the association on sympathy condition was only medium sizes ($r > .30$).

Complaint Expectation	Corresponding Response			
	Advice	Agreement	Listening	Sympathy
Advice	.56**	-.04	.05	-.04
Agreement	.05	.59**	-.10	.03
Listening	.03	-.19**	.57**	-.12
Sympathy	.14*	.10	-.01	.32**

Table 19: Correlations among Complaint Expectation and Corresponding Response by the Four Types of Expectations

The correlational results indicated an association between complaint expectations and corresponding response to the complainers. Did the association suggest no mean difference between complaint expectations and corresponding response? A 4 (types of complaint expectation) by 2 (complaint expectation/corresponding response) repeated measure ANOVA was conducted to assess if participants had inconsistency between complaint expectation and corresponding response. The sphericity assumption was not met, and the Huynh-Feldt correction was applied. The results are showed in Figure 3. The two-way interaction effect was significant, $F(2.87, 583.31) = 26.1, p < .001$. The simple main effects were conducted between complaint expectation and corresponding response by conditions. The results showed that people in the advice condition have less accuracy

on complaint expectation ($M = 0.34$, $S.D. = 0.29$) than on corresponding response ($M = 0.44$, $S.D. = 0.31$), $p < .001$. There was no difference between complaint expectation and corresponding response on the agreement and listening conditions. Interestingly, people in the sympathy condition had better accuracy on complaint expectation ($M = 0.40$, $S.D. = 0.24$) than on corresponding response ($M = 0.26$, $S.D. = 0.21$), $p < .001$. This suggested that people might prefer other types of response over sympathetic response if they were asked for sympathy.

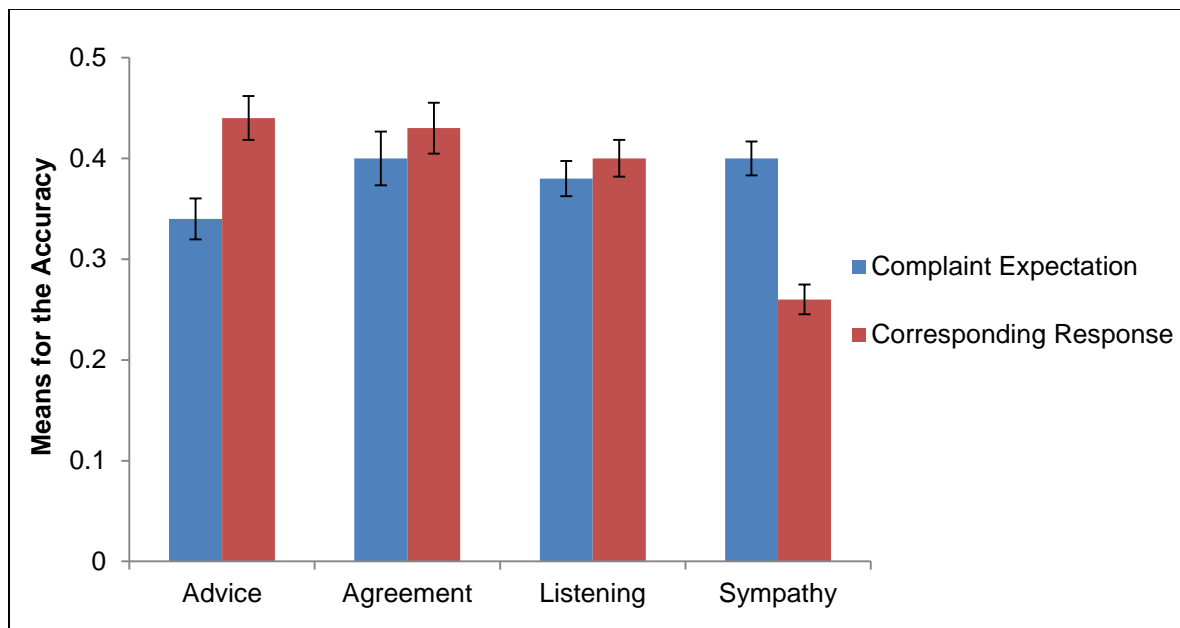


Figure 3: Accuracy of Complaint Expectation and Corresponding Response by Conditions

Self-Reported Certainty of Accuracy of Complaint Expectations

Although people showed different levels of accuracy in determining complaint expectations and corresponding responses to the four types of expectation, this did not mean that they were aware of the variability of their accuracy as the complaint

expectation changes. In other words, people may hold the same level of certainty as to their accuracy across different expectations. Since participants rated their accuracy to each complaint text on a 7-point self-reported scale, their rating results were compared by expectations. In order to test this, a within-subjects ANOVA was conducted to assess the certainty of accuracy of the four complaint expectations. The results are showed in Table 20. The main effect for the self-reported certainty of accuracy of the four expectations was significant, $F(3, 609) = 6.17, p < .001$. An LSD post hoc analysis showed that the certainty to accuracy on agreement was greater than the certainty to accuracy on advice, listening, and sympathy, $ps < .05$.

<i>Mean for Certainty</i>	<i>Mean (S.D.)</i>
Advice	4.99 (1.08)
Agreement	5.16 (1.08)
Listening	5.08 (1.09)
Sympathy	4.99 (1.10)
Total	5.06 (1.01)

Table 20: Means for Certainty to Accuracy of Complaint Expectation (Standard deviations appear in parentheses next to means.)

The Test for the Overconfidence Effect

One of the major questions in Study 3 was whether people show overconfidence in their accuracy at identifying expectations. In order to compare self-reported certainty to the accuracy of complaint expectations, the self-reported certainty on a 7-point scale

was linear transformed to a new scale ranging from 0 to 1. The average means for the transformed self-reported certainty and the accuracy of complaint expectations were submitted to a paired t test. The result showed that the averaged mean for self-reported certainty ($M = .69$, $S.D. = .17$) was greater than the averaged mean for complaint expectations ($M = .33$, $S.D. = .11$). It indicated that participants were overconfident in their self-report rating when assessing certainty of accuracy of complaint expectations.

Personality and Self-Report Measures

The purpose of including personality traits in this study was to examine associations between personality traits and the accuracy at identifying complaint expectations and corresponding responses. The associations between personality traits and the accuracy of determining complaint expectations and corresponding responses were compared.

Twelve variables were adopted in this correlational analysis, including social skill inventory, self-esteem, big five personality traits, two variables from an autism scale, two variables from EQSQ that measures emotional quotient, and one variable for self-reported certainty of accuracy. The twelve variables were correlated to complaint expectation and corresponding response. Since complaint expectation and corresponding response were positively correlated ($r = .62$, $p < .001$), these two complaint items could refer to a broader concept of the accuracy of identifying complaint expectations. The twelve variables were correlated to the two complaint items. The results are shown in Table 21. The effects emerged on two variables: imagination and EQ scores. These two variables were positively associated with accuracy at identifying complaint expectations

and corresponding responses. Imagination was one of the facets in the Autism-Spectrum Quotient scale. People who are diagnosed with Austin have worse imagination ability and lower scores on the imagination facet (Baron-Cohen et al., 2001). EQ refers to emotional (or empathy) quotient, which can reflect to what degree people are able to identify the thoughts and feelings of others and respond appropriately (Wakabayashi et al., 2006). Furthermore, the EQ score was positively associated with the imagination score ($r = .42$, $p < .001$). It suggested that identifying one's expectation behind a complaint required the ability to understand one's emotions or to imagine a human-based story.

	Complaint Expectation	Corresponding Response
Social Skill Inventory	.02	.02
Self-esteem	-.02	.05
TIPI		
Extraversion	-.02	.01
Agreeable	-.07	.02
Conscientious	.01	.04
Emotional stability	.04	.02
Openness	.11	.11
AQ scale		
Social Skill	-.04	-.01
Imagination	.16*	.21*
EQSQ scale		
EQ score	.12[†]	.12[†]
SQ score	.05	.06
Certainty	-.03	-.04

Table 21: Correlational Matrix between Personality Traits and the Accuracy of Complaint Expectations and Corresponding Responses (Note: ** $p < .01$, * $p < .05$, [†] $p < .10$, $df = 204$, TIPI = ten-item personality inventory, AQ scale = Autism-Spectrum Quotient scale, EQSQ = Empathizing Quotient and Systemizing Quotient scale)

DISCUSSION

Study 3 examined whether people could accurately identify the correct expectations behind complaints. This question was answered from three perspectives: accuracy at identifying complaint expectation and corresponding response, certainty about accuracy, and personality traits. The analyses for accuracy of complaint

expectation and corresponding response were used to examine whether people had accurate perceptions of complaint expectations and if they responded to complainers in accordance with complainers' expectations. The analysis for certainty about accuracy was to test the overconfidence effect. Last, the analyses for personality traits were used to determine whether personality traits predict accuracy at identifying complaint expectations.

There were several interesting findings about the accuracy and corresponding response in Study 3. People had higher levels of accuracy in identifying the complaints made for the purposes being listened to or receiving sympathy, compared to the accuracy in identifying expectations of advice or agreement. It suggests that people were more sensitive to the high emotional complaints, which were the dimension of emotional involvement in the two-factor model. The possible explanation for this higher level of accuracy was the stereotype about complaining behavior. People generally view complaining as emotional venting. When receiving complaints, people may be inclined to consider the complaint as an emotional signal. Therefore, they may underestimate the possibility of seeking advice or agreement when someone complains. However, when participants in this study were asked to respond to the complainer, they turned to listen to the complainer or give advice over other types of feedback, such as sympathy. Why were people less likely to show sympathy in their interactions with complainers? It is possible that sympathy is a reaction that requires good social skills or many cognitive resources. In social contexts, sympathy implies a direct caring and empathetic relationship with someone following his or her negative outcomes (Feather & Sherman, 2002). If people

hold a belief that sympathizing with a complainer will cost more effort than they expect, they might prefer to respond to the complainer in other ways, although they know he or she seeks advice through their complaints.

It is also worth noting that participants were overconfident of their accuracy at identifying complaint expectations. The average self-reported accuracy percentage was 5.06 on a 7-point scale (from 1 to 7), approximately 68% of perceived accuracy. However, the overall actual accuracy percentage was only 33%. This result confirmed the previous finding that the overconfidence effect is pervasive in social behavior. In addition, there is a possibility that ecological baselines may account for the overconfidence effect in this study. Recalling the frequencies of each complaint expectation, the frequency of venting expectation was three times as the frequencies of other three expectations. This means, people preferred to have someone to vent over other expectations when complaining. If so, it is possible to have a selection bias that results in the overconfidence effect.

In addition, this study found that imagination ability and EQ score were associated with the accuracy at identifying complaint expectations. Moreover, the imagination ability and EQ score were positively correlated in this study. It implies that there may be a personality type that can predict accuracy rate of identification of complaint expectations. Future research should pay more attention on exploring possible predictors of identification of complaining behaviors.

Additional Relevant Analysis: Discriminant Analysis of Complaint

Expectation Detection in Language Usage

Since language markers were identified in the pilot study and Study 1, the question of whether we can use computerized text analysis methods to detect complaint expectations should be addressed in this research. Also, it is important to observe that human judges identify complaint expectations by reading content, whereas computers identify human complaint expectations by detecting certain language markers. Do computers perform as well as human beings in this complaint identification task? Recently, more and more commercial companies start to use machine learning to manage customers' response. Thus, understanding identification performance on computerized analysis can provide a new approach for companies to improve service quality.

The purpose of this chapter was to examine the accuracy rate of computerized detection methods and then compared the computer's performance to human judges' accuracy. In Study 1, 272 complaint texts were labeled with their accompanying expectations by their original authors. Sixteen texts of the 272 complaint texts were selected in Study 3 for the purpose of examining human judges' accuracy. According to the results in Table 17, the accuracy rate was 30% for the expectation of seeking advice, 25% for the expectation of seeking agreement, 38% for the expectation of being listened to, and 40% for the expectation of seeking sympathy. It is important to note that the accuracy rate was calculated based on 204 participants. On average, the sixteen texts took participants 20 to 30 minutes to rate.

To initially train our model of identifying the language of complaints, the sixteen complaint texts used in Study 3 were excluded from the 272 texts, resulting in 256 texts for further analysis. The aim of the further analysis was to use language markers to detect complaint expectations. Since the variable for the four types of complaint expectation was categorical, logistic regression and discriminant analysis were the appropriate statistical methods for analysis. However, logistic regression focused on parameter estimation for determining which predictor contributes more effect on variance, whereas discriminant analysis focused on the classification of group membership (Spicer, 2004). Discriminant analysis is more appropriate for examining group classification. Thus, discriminant analysis was adopted.

The 256 texts were submitted to discriminant analysis, which can assess the adequacy of classification, given the number of group members (Spicer, 2004). For example, if we have a group of people with three different jobs (librarians, lawyers, and engineers) and they all fill out the big-five personality scale, with discriminant analysis, we could examine how well we use the five personality traits to classify people in the three job categories and compare the results to their actual jobs. Due to these properties, discriminant analysis was promising to study whether language markers were appropriate for detecting different types of complaint expectations. In addition, discriminant analysis was composed of two approaches: descriptive discriminant analysis and predictive discriminant analysis. Predictive discriminant analysis was used to answer the research questions in this chapter.

In the first model, the type of complaint expectation, which served as a categorical variable, was entered into discriminant analysis as a dependent variable. The two theoretical dimensions, emotional involvement (negative emotion words) and certainty (certainty words and pronoun use), were entered into discriminant analysis as predictors. The Box's M test was not significant (Box's M = 22.15, $p = .25$), indicating that group variance was equivalent and the assumption of homogeneity of covariance was met. The classification results are presented in Table 22. The overall hit rate was 29.6%, and the cross-validation was 24.9%. In order to understand under which condition computers' performance was better than random guessing, the hit rates of cross-validation in the four conditions were compared to the baseline (25%) in a chi-square test. The chi-square test was significant, $\chi^2(3) = 23.20$, $p < .001$. The post-hoc comparison indicated that the hit rates were better than random guessing in the advice and validation conditions ($p < .001$), but worse in the sympathy condition ($p = .05$).

		Predicted Group Memberships				
		1.	2.	3.	4.	Total
Original	1. Advice	16 (40%)	7 (18%)	10 (25%)	7 (17%)	40
	2. Sympathy	19 (39%)	11 (23%)	10 (20%)	9 (18%)	49
	3. Agreement	12 (29%)	2 (5%)	19 (46%)	8 (20%)	41
	4. Be listened	39 (31%)	14 (11%)	44 (34%)	30 (24%)	127
Cross-validated	1. Advice	15 (38%)	7 (18%)	10 (25%)	8 (20%)	40
	2. Sympathy	21 (43%)	7 (14%)	12 (25%)	9 (18%)	49
	3. Agreement	12 (29%)	4 (10%)	16 (39%)	9 (22%)	41
	4. Be listened	39 (31%)	14 (11%)	48 (38%)	26 (21%)	127

Table 22: Classification Results for Model 1. The first model in discriminant analysis was built on two theoretical dimensions.

Did other language markers contribute the effect to Model 1 and improve the model's performance? In order to answer this question, two language variables, word count and articles (a, an, the), were selected to enter into the second model. According to Biber's linguistic research (1988), word count and the use of articles reflected density of information. If people write with more words, they convey more information. If people write with more articles, they refer to more specific information. In addition to the original two theoretical dimensions, the variables of word count and articles were also entered to the second model. The Box's M test was not significant (Box's M = 54.86, $p =$

.21), and the assumption of homogeneity of covariance was met. The classification results are presented in Table 23. The overall hit rate was 33.9%, and the cross-validation was 29.6%. Again, the hit rates of cross-validation in the four conditions were compared to the baseline in a chi-square test. The chi-square test was significant, $\chi^2(3) = 37.64$, $p < .001$. The post-hoc comparison indicated that the hit rates were better than random guessing in the advice and validation conditions ($p < .001$).

		Predicted Group Memberships				
		1.	2.	3.	4.	Total
Original	1. Advice	22 (55%)	6 (15%)	6 (15%)	6 (15%)	40
	2. Sympathy	17 (35%)	14 (29%)	12 (25%)	6 (12%)	49
	3. Agreement	10 (24%)	5 (12%)	18 (44%)	8 (20%)	41
	4. Be listened	35 (28%)	27 (21%)	32 (25%)	33 (26%)	127
Cross-validated	1. Advice	21 (53%)	7 (18%)	6 (15%)	6 (15%)	40
	2. Sympathy	18 (37%)	11 (22%)	12 (25%)	8 (16%)	49
	3. Agreement	10 (24%)	5 (12%)	15 (37%)	11 (27%)	41
	4. Be listened	36 (28%)	26 (21%)	36 (28%)	29 (23%)	127

Table 23: Classification Results for Model 2

In the first two models, certainty in pronoun use was entered as a variable. However, it reflected a composite score of the use of first, second, and third person

pronouns. Did separate pronouns contribute more effect in the model than the composite score? It is possible that the effect of pronoun use was underestimated when combined to a composite score. Therefore, pronoun use (first, second, and third person pronouns) was entered into the third model instead of the original composite score. First person plural pronouns were excluded because of their low base rate. The Box's M test was significant (Box's $M = 199.86$, $p < .001$), and the assumption of homogeneity of covariance was not met. This result suggested that a composite score for the use of pronouns was a solution when conducting discriminant analysis. Entering separate personal pronouns increased the heterogeneity of covariance in analysis.

So far, the five variables (certainty in pronoun use, certainty words, negative emotion words, Word Count, and articles) played a role in Model 2 for identifying complaint expectations. Among the five variables, only negative emotion words belonged to a class of content words. The other four variables were all in a class of function words. If this linguistic model was applied to a specific social context, then adding content words reflecting the social context should improve model performance. Since the top complaint topic with the most frequencies was financial or job related issues, two content word categories (money and work) were included to the fourth model. The Box's M test was not significant (Box's $M = 103.16$, $p = .16$), and the assumption of homogeneity of covariance was met. The classification results are presented in Table 24. The overall hit rate was 40.5%, and the cross-validation was 31.5%. The hit rates of cross-validation in the four conditions were compared to the baseline in a chi-square test. The chi-square test was significant, $\chi^2(3) = 10.44$, $p = .02$. The post-hoc comparison indicated that the hit

rates were better than random guessing in the validation conditions ($p < .001$), and slightly better in the advice and listening conditions ($ps = .10$).

		Predicted Group Memberships				
		1.	2.	3.	4.	Total
Original	1. Advice	20(50%)	8 (20%)	5 (13%)	7 (17%)	40
	2. Sympathy	8 (17%)	19 (39%)	11 (22%)	11 (22%)	49
	3. Agreement	10 (24%)	9 (22%)	18 (44%)	4 (10%)	41
	4. Be listened	23 (18%)	28 (22%)	29 (23%)	47 (37%)	127
Cross-validated	1. Advice	13 (33%)	11 (27%)	7 (18%)	9 (22%)	40
	2. Sympathy	10 (20%)	13 (27%)	11 (22%)	15 (31%)	49
	3. Agreement	11 (27%)	10 (24%)	15 (37%)	5 (12%)	41
	4. Be listened	24 (19%)	30 (24%)	33 (26%)	40 (32%)	127

Table 24: Classification Results for Model 4

To summarize, the cross-validated hit rate for the two theoretical dimensions (certainty and emotional involvement) was only 24.9%, almost the same as the baseline (25%). Overall, adding more variables to identify complaint expectations in the model improve the percentage of correct classifications (see Table 25). The performance of the two theoretical dimensions could almost reach the baseline level of accuracy. However, is

it true that the computerized text analysis method could only provide a hit probability close to random guessing?

		Percentage of Correct Classification (%)	
	Entered Variables	Original	Cross-validated
Model 1	certainty in pronoun use, certainty words, negative emotion words	29.6	24.9
Model 2	certainty in pronoun use, certainty words, negative emotion words, WC, Article	33.9	29.6
Model 3	First person singular pronouns, second person pronouns, third person pronouns, WC, article, negative emotion words	---	---
Model 4	certainty in pronoun use, certainty words, negative emotion words, WC, Article, money	40.5	31.5

Table 25: Percentage of Correct Classifications for Each Model. (There was no correct classification for Model 3 because of its violation of assumptions.)

In fact, there was an interesting difference between the types of complaint expectations. As summarized in Table 26, the percentages of cross-validated correct classifications varied across complaint expectations. Human judges showed almost 40% accuracy in detecting complaint expectations made by people with high emotional involvement but only had about 27% accuracy in detecting complaint expectations made by people with low emotional involvement. Importantly, the results from computerized text analysis methods showed the opposite direction. The computerized text analysis method had about 40% accuracy in detecting complaint expectations made by people

with low emotional involvement and had about 23% of accuracy in detecting complaint expectations made by people with high emotional involvement.

	High Emotional Involvement		Low Emotional Involvement	
	Sympathy	Be listened	Advice	Agreement
Human Judges	40%	38%	30%	25%
Model 1	14%	21%	38%	39%
Model 2	22%	23%	53%	37%
Model 4	27%	32%	33%	37%

Table 26: Percentage of Cross-validated Correct Classifications for Human Judges and Each Model by Complaint Expectations

SUMMARY

The results of this additional analysis showed two things: first, when participants used language markers to identify a certain complaint expectation, the accuracy rate from the computerized text analysis was around 25% to 30% on average. Human judges performed slightly better than computerized text analysis and had a 30% to 35% of accuracy rate. Although human judges had better performance, it is important to note that reading complaint texts for the purpose of identifying complaint expectations was time consuming for human judges. Human judges could only rate a limited number of texts because of their cognitive load. In this research, it took human judges about a half hour to rate 16 texts with an average word count of 200. If human judges had more complaints to identify, such as hundreds of customers' complaint letters, a decline in accuracy would

not be surprising. Conversely, computerized text analysis placed no demand on human judges although it did not perform as well overall as human beings at the present stage.

The results of this further analysis also revealed issues with detecting high versus low emotional involvement. The big picture showed that human beings could do slightly better than computerized text analysis on this complaint identification task. However, if we look at the results more closely, emotion became the issue in this identification task. As we could see, human judges were better at detecting high emotional complaint expectations, such as seeking sympathy or someone to listen to. On the contrary, computerized text analysis was better at detecting low emotional complaint expectations, such as seeking advice or agreement. This finding not only indicated that verbal emotion is the unique product of human beings but also showed that computerized techniques can capture informational messages from human beings. For this modern computer generation, it is urgent to investigate how to use computerized techniques to understand human emotion.

General Discussion

OVERVIEW OF FINDINGS

The four major complaint expectations were identified by content analysis, and the language use for the four expectations was analyzed by computerized text analysis methods in this dissertation. The three studies (the pilot study, Study 1 and 2) with a total of approximately 800 complaint texts showed that people had distinctive language makers for different complaint expectations. The pilot study provided correlational evidence for the relationship between complaint expectations and linguistic markers. Studies 1 and 2 provided the averaged means of evidence for complaint expectations in language use. The experimental manipulation in Study 2 also provided evidence that people adjust their language usage temporarily to fit certain assignments. However, a few challenges need to be overcome in the manipulation study before it can provide reliable evidence.

Study 3 provided a basic sense of how well human judges can identify expectations behind a complaint. Not surprisingly, human judges overestimated their accuracy on expectation identification. More importantly, human judges' accuracy was roughly 25 to 40 percent, depending on the types of complaint expectations. According to the findings in Study 3, human judges' performance was only slightly better than a random guessing baseline (25%). In addition, Study 3 provided the correlations between accuracy at identifying expectations and two personality variables: imagination and EQ. People who had better imaginative ability and emotional intelligence were more accurate in their identification of complaint expectations. The further discriminant analyses

showed that human judges could recognize high emotional complaints slightly better than the baseline, whereas computerized text analysis could recognize low emotional complaints slightly better than the baseline.

This dissertation also revisited a gender stereotype about complaining behavior. Gender difference was examined in the pilot study and Study 1 and only emerged on one specific complaint topic: family and friends, suggesting that women complain about their close relationships more than men do. However, this result was only found in the pilot study, not in Study 1. More importantly, there is no evidence suggesting that women prefer to be listened to and men prefer to receive advice or solutions when complaining. In this research, the evidence indicates that neither men nor women have any particular preference when it comes to complaint expectations. Although some self-help books, such as *Men are from Mars, Women are from Venus* (Gray, 1992), claim that men and women seek different feedback in relationships, this gender statement should be more carefully considered in social behaviors, including complaining behavior.

Emotional involvement was the dimension used for assessing the degree to which people invest emotion in their complaints. The use of negative emotion words was adopted to track people's emotional involvement in this research. In complaints regarding people's recent negative events, the use of negative emotion words signaled people who want to be listened to or vent over people who have other types of expectations (the pilot study and Study 1). In the correlational analysis for the manipulation experiment, people who were instructed to complain for sympathetic feedback used more negative emotion words than people who were instructed to complain for other types of feedback. From a

broader view of emotional involvement, the expectation of being listened to and sympathy were relatively more emotional or emotion-oriented among the four expectations. On the contrary, seeking agreement or advice was more cognitively demanding. If people held formed opinions, they were more likely to seek agreement to confirm their opinions in complaints. If people had no clue as to the issue they complained about, they sought external advice. Unlike the expectation of being listened to and sympathy, these two types of expectations were relatively more task-oriented. People who sought agreement or advice in complaints tried to find practical feedback to meet their goals. Therefore, these two types of expectations were less emotionally involving. Language use is therefore a promising tool in distinguishing the differences between complaints. In addition, there was no examination about arousal level of emotion. People who sought to vent might use higher arousal level of negative emotion words or extreme negative emotion words. Therefore, future researchers who use the dimension of emotional involvement should consider exploring negative emotion from the view of arousal levels.

Certainty about complaint causes was the dimension used for assessing how certain people are about the nature of their complaints. The concept of certainty was measured through certainty words and pronoun use in this research. The use of certainty words successfully distinguished the differences between complaint expectations in the pilot study but failed in Study 1. Fortunately, pronoun use for assessing certainty distinguished the differences between the expectations with high certainty and those with low certainty in the pilot study and Study 1. Words in the pronoun categories were

function words that are often used and validated for mental status (Pennebaker, 2011), suggesting that pronoun use can be a good predictor of complaint expectations.

Overall, the dimensions of certainty and emotional involvement in the two-factor model provide a theoretical scope to classify different types of complaint expectations. With the two dimensions, it is more systematic to analyze the four expectations and to specifically analyze one certain type of expectation.

INTERPERSONAL COMMUNICATION

In daily communication, facial expressions and the content of conversations are the major clues that people use to understand their listeners (Juslin & Laukka, 2003). Now, we are heading to a new internet generation. More and more social behaviors happen on the internet. If we communicate with people via internet interfaces (e.g., Facebook) or electrical products (e.g., smart phones), how can we understand their intentions without seeing their facial expressions? The content of messages is the answer.

The content of messages can be understood through what people write and how they write. The way what people write refers to the words that indicate subjects or topics. For instance, a man is complaining to his friend. We do not know if the man is complaining about losing his job or his marriage unless we have the content words to identify the topic. Once we know the topic the man is complaining about, we will have more opportunities to detect his expectation from the complaint. Similarly, the ways people write a complaint may reflect their psychological status. If we detect more language markers of insecurity from the man, we may assume that he needs an answer to his problem because he is uncertain about what to do. If we detect more emotional

language use from the man, we may assume that he wants someone to understand his feelings. All these tips about language use can improve our social skills and the quality of interpersonal communications. More importantly, these language tips can walk people who have bad social skills or impaired interpersonal interactions through interpersonal issues and may help them overcome their difficulties of engaging in relationships.

HUMAN-ROBOT COMMUNICATION: ROBOTIC PSYCHOLOGY AND THERAPY

The advantage of using computerized text analysis to study social behavior, such as complaining behavior, is mechanical application. In our modern world, we are accustomed to interacting with various mechanical products in our daily lives, such as the virtual assistant Siri and vacuum-cleaning robots. In another example, Shibata (2004) developed a robot and tested it on people who are diagnosed with autism or Down's syndrome. He found that the robot has a positive impact for these people on the early stages of depression. This therapeutic finding about robots has inspired people to consider the importance of artificial intelligence. Such mechanical inventions also guide people to start to investigate robotic psychology and therapy.

Robotic psychology and therapy are new research areas that employ a systematic approach to the study of psychological status and social behaviors on human-robot interaction (Libin & Libin, 2003). Past research has demonstrated the beneficial effects of robotic psychology in human-robot communication. Examples of this robotic therapeutic application include nursing home settings (Taggart, Turkle, & Kidd, 2005), socio-psychological care (Wata & Shibata, 2006), and health care (e.g., A Weight Loss Coach;

Kidd & Breazeal, 2008). So far, the robotic systems are widely applied in human lives, more than we expect.

Different types of robots can be classified by human needs or benefits. Libin and Libin (2004) classified robots into two primary categories: assisting versus interactive simulation robots. Assisting robots include industrial robots, military robots, medical robots, and service robots. These assisting robots are built to provide physical help and to improve the quality of human life. On the other hand, interactive simulation robots include social robots, educational robots, recreational robots, and therapeutic robots. The interactive simulation robots are designed to provide emotional feedback and communication. The functions of these two types of robots satisfy basic human needs and demands.

Since robotic systems make a huge contribution to improving human quality of life, how do we apply language use in complaining research to human-robot communication? As past research has shown (Libin & Libin, 2004), assisting robots and interactive simulation robots are the two major categories in robotic systems. According to the view of goal orientation, assisting robots are task, problem solving, or cognition-oriented, whereas interactive simulation robots are facial expression or emotion-oriented. Therefore, applying computerized text analysis methods to robotic systems for detecting emotional or problem-solving demands can improve the quality of human-robot communication. If robots can distinguish the difference between problem-solving versus emotional demands from human beings, then robots can carry not only engineering value but also social communication meanings.

HUMAN-ROBOT TECHNIQUES: RECOGNIZING HUMAN INTENTIONS

Can robots identify the human intentions or expectations behind a social behavior? The traditional ways for engineers to design robots are based on nonverbal and verbal behaviors. Most non-verbal behaviors involve physical movement, such as body and facial orientation, eye gaze, frequent gestures, etc (Richmond & McCroskey, 1995). Verbal behaviors usually refer to the use of language, including self-disclosure, emphasizing commonalities, references to knowledge, explicit messages of self-esteem, etc. (Richmond & McCroskey, 1995). Since verbal and non-verbal behaviors have some fundamental communication features, engineers design robots to detect certain features and to respond to human beings in accordance with the features robots detect. Furthermore, the investigation of users' need and expectations may be able to improve the quality of human-robot interaction and raise the acceptance use of robots in daily lives (Broadbent, Stafford, & MacDonald, 2009). If people express their expectations or needs in verbal behavior, how do we study it?

There is no doubt that language is the most important tool for understanding human verbal behaviors. Human beings can understand people's intentions through cognitive or social verbal skills. However, how do engineers transfer human verbal skills or mindsets to robots and make robots understand human intentions?

Detecting and recognizing human intention have been challenges in artificial intelligence. One of the approaches to understanding human intention for building robots is theory of mind (Kelley, Nicolescu, Tavakkoli, King, & Bebis, 2008), which states that a psychological mechanism that human can interpret and predict other's actions.

However, the mechanical simulation of theory of mind is vision-based when engineers design robots (Kelley, Nicolescu, Tavakkoli, King, & Bebis, 2008). For example, if robots detect a person looking around and then gazing at a water dispenser, the robots can recognize his or her intention to get water because of his or her thirst. The vision simulation can only detect human intention through physical movement, not language. However, language can be a useful tool in detecting human intentions. For some reason, people occasionally hide their intentions in conversations when interacting with other people. Complaining behavior is a good example of such a situation. Due to impression management (Kowalski, 1996), people expect others to recognize their demands in complaints. Through studying complaining behaviors in language use, we have more opportunities to understand how people utilize language to show intentions. Additionally, we can test the detection of human intentions through language use and improve accuracy in detecting human intentions.

LIMITATION AND FUTURE DIRECTIONS

There are a few limitations in this complaint research. First, the complaint topic was not restricted. When participants complained about different topics, they might be more likely to have a certain type of expectation. For example, people who complain about financial issues may prefer to have a solution to their problem rather than sympathy. People who experience bereavement or illness may want to have someone to talk to instead of receiving advice. Thus, focusing on a specific topic can help us to investigate how people demonstrate various language styles when complaining about the same topics with different expectations. Second, personality traits may be a factor that

can affect how people make a complaint. For instance, people who have low emotional stability may make more emotional complaints than people who have better emotional stability. It is important to note that personality traits and complaint topics are intertwined. People with the same personality traits may show different complaint expectations with regard to different topics. Third, complaining behavior is recursive and dynamic. It happens between complainer and listener. In this research, however, the complaints were made by complainers without any feedback from listeners. Lack of feedback for complainers in this research may reinforce their complaint expectations. On a certain level, it may also simplify complainers' thoughts about their expectations. In other words, complainers may change their expectations when complaining to someone. This research missed the dynamics between complainers and listeners. Future research might assess the complaint dynamics by tape-recording dyadic conversations.

Personality traits may affect how people construct their complaints. They may also affect how listeners perceive and respond to complainers. This research only examined whether listeners perceive and respond to complainers in accordance with their expectations. It is possible that listeners' perceptions and responses may be affected by their or complainers' personality traits. The issue of how personality traits function in complaining behavior should be addressed more in the future.

CONCLUSIONS

Research about complaining behavior has been focused on consumer behavior, medical treatment, and educational satisfaction. Very little is known about the categories and functions of everyday complaints, particularly in social psychology. When people

engage in social behavior, such as complaining, they want to be listened to and understood. A wrong or inappropriate response to a complainer will erode an ongoing friendship or close relationship. By studying complaining behavior, we can have more understanding of complainers' needs and demands, regardless of emotional or cognitive demands. This research investigated the role of language in making complaints. More importantly, this research initiates a first step in understanding how to detect and recognize human intentions in language modeling. Given the findings in this dissertation, people are encouraged to pay more attention to the language people use in their complaints.

APPENDICES

APPENDIX A: PILOT MATERIALS

Title in Mechanical Turk board: Want to complain? Click here.

Title for the experimental website: Write a Complaint about Your Life

Please fill out the following demographic information:

- Your Gender: _____
- Your Age: _____
- Your Country / Residence: _____
- Your First Language: _____

Instruction:

A complaint is defined as a verbal expression of dissatisfaction with a person, object, event, or situation. Please recall a negative event that recently happened and imagine complaining to someone about it. Try to write continuously, and do not stop writing until the 5 minutes have passed. Be sure to write more than 60 words, approximately 5 or 6 sentences.

- Your Complaint Story:

Please answer the following questions pertaining to your complaint.

- Who did you complain to in your writing?
- What was your complaint about?
- If this happened in your life, what was the reason behind your complaint?
- What did you want your listener(s) to say or do in response to your complaint?

APPENDIX B: STUDY 1 MATERIALS

Title in Mechanical Turk board: Want to complain? Click here.

Title for the experimental website: Write a Complaint about Your Life

Please fill out the following demographic information:

- Your Gender: _____
- Your Age: _____
- Your Country / Residence: _____
- Your First Language: _____

Instruction:

A complaint is defined as a verbal expression of dissatisfaction with a person, object, event, or situation. Please recall a negative event that recently happened and imagine complaining to someone about it. Try to write continuously, and do not stop writing until the 5 minutes have passed. Be sure to write more than 60 words, approximately 5 or 6 sentences. After writing, you will fill out four short questionnaires. This task takes you approximately 25-30 minutes to finish.

- Your Complaint Story:

Please answer the following questions pertaining to your complaint.

- Who did you complain to in your writing?
 - a. Anyone (or no specific listener)
 - b. Boy or girl friend
 - c. Friend or acquaintance
 - d. God
 - e. Parents
 - f. Service provider
 - g. Siblings
 - h. Spouse
 - i. Other
- What was your complaint about?
 - a. Acquaintance
 - b. Attitude
 - c. Job, financial issue, or career
 - d. Consumer behavior
 - e. Family or friends
 - j. Personal affairs

- k. Politics
- l. Other
- What did you want your listener(s) to say or do in response to your complaint?
 - a. just listen to me
 - b. provide a solution to your problem (e.g., I have a possible solution for you.)
 - c. sympathize with me (e.g., I feel so sorry for you.)
 - d. validate my feelings (e.g., I agree with you.)
 - e. other
- How certain are you that your conversational partner knows what you expect them to respond to you?
 - 1 (Not at all certain) – 7 (Very certain)
- How emotionally involved were you in your complaint?
 - 1 (none) – 7 (a great deal)
- To what extent did you express your emotions in your writing?
 - 1 (none) – 7 (a great deal)
- In my complaint, I was focusing on myself.
 - 1 (strongly disagree) – 7 (strongly agree)
- In my complaint, I was focusing on the person/target I complain about.
 - 1 (strongly disagree) – 7 (strongly agree)

APPENDIX C: CORRELATIONAL ANALYSIS BETWEEN DIFFERENT COMPLAINT EXPECTATIONS ON LANGUAGE USAGE AND SELF-REPORT MEASUREMENT IN STUDY 1

Variable	Advice	Agreement	Be Listened	Sympathy
Word Count	-.13 [*]	.16 [*]	.01	-.03
Word Count/sentence	.06	-.04	-.01	-.01
Focus of Attention	.09	-.06	-.07	.06
I	.06	-.05	-.06	.07
We	-.02	.05	-.01	-.02
You	.15 [*]	.01	-.10 [†]	-.01
Shehe	-.06	.01	.08	-.06
They	-.12 ^{**}	-.01	.02	.10 [†]
Negative Emotion	-.10 [†]	.01	.13 [*]	-.08
Specific Negative Emotion	-.10 [†]	.03	.11 [†]	-.09
Anxiety	-.04	.05	-.03	.02
Anger	-.10 [†]	.04	.10 [†]	-.06
Sad	-.02	.04	.01	-.03
Swear	-.03	-.07	.16 [*]	-.12 [*]
Self-report				
Self-focus	-.06	-.12 [*]	.03	.12 [*]
Emotionality	-.02	.04	.02	-.04
Certainty	.14 [*]	.01	-.15 [*]	.06

Note: ^{*} $p < 0.05$, ^{**} $p < 0.01$, [†] $p < .10$.

APPENDIX D: Study 2 Materials

Title in Mechanical Turk board: How do we complain? Click [here](#).

Title for the experimental website: What do we make an efficient complaint?

Please fill out the following demographic information:

- Your Gender: _____
- Your Age: _____
- Your Country / Residence: _____
- Your First Language: _____

Instructions

In this study, you will read a story about Taylor. Your job is to imagine you are Taylor, who wants to complain to an old friend about a company's policy. You will be given a situation to complain about as Taylor. In the situation, you will be given a specific request for an old friend. Please write a complaint to your friend to satisfy the request as best as you can.

Please imagine you are Taylor, whose gender is the same as yours.

Taylor is frustrated with her (his) job. There is a new project in her (his) company. Instead of assigning the work to Taylor, her (his) department outsources the work to an outside agency. It is frustrating for Taylor because she (he) wants to work on the project. So far, Taylor is quite new in her (his) position, and hasn't had much experience in her (his) company.

Now, imagine you are Taylor and you want to tell an old friend about your company's policy. If you want your friend to provide advice or a solution to you, how would you complain?

Now, imagine you are Taylor and you want to tell an old friend about your company's policy. If you want your friend to agree with your opinion, how would you complain?

Now, imagine you are Taylor and you want to tell an old friend about your company's policy. If you want your friend to just listen to you, how would you complain?

Now, imagine you are Taylor and you want to tell an old friend about your company's policy. If you want your friend to sympathize with your feelings, how would you complain?

Now, imagine you are Taylor and you want to tell an old friend about your company's policy. How would you complain?

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- If you show the story you just wrote to an anonymous reader, how certain are you that the reader knows what you expect he or she to respond to you?
 - 1 (Not at all certain) – 7 (Very certain)
- If you were Taylor, in that case, what do you want your listener(s) to say or do in response to your complaint?
 - a. just listen to me
 - b. provide a solution to your problem (e.g., I have a possible solution for you.)
 - c. sympathize with me (e.g., I feel so sorry for you.)
 - d. validate my feelings (e.g., I agree with you.)

APPENDIX E: CORRELATIONAL ANALYSIS BETWEEN DIFFERENT COMPLAINT EXPECTATIONS ON LANGUAGE USAGE IN STUDY 2

Variable	Advice	Agreement	Be Listened	Sympathy
Word Count	.07	.07	.07	-.20**
Word Count/sentence	.16*	-.04	-.15*	.04
Focus of Attention				
I	-.04	.01	.02	.02
We	.01	.02	-.03	.01
You	-.04	-.01	.01	.04
Shehe	.10	.03	.01	-.13 [†]
They	.13 [†]	-.06	-.02	-.13 [†]
Negative Emotion	-.05	.04	-.08	.09
Specific Negative Emotion				
Anxiety	-.06	-.08	-.02	.16*
Anger	-.12 [†]	-.04	-.03	.19**
Sad	-.11	-.06	.01	.16*
Swear	-.10 [†]	.01	-.04	.14*
	.02	-.02	.01	-.01
	-.11	-.05	.01	.17*

Note: * $p < 0.05$, ** $p < 0.01$, [†] $p < .10$.

APPENDIX F: Study 3 Materials

Title in Mechanical Turk board: Are you a good listener? Click here.

Title for the experimental website: Are you a good listener?

Please fill out the following demographic information:

- Your Gender: _____
- Your Age: _____
- Your Country / Residence: _____
- Your First Language: _____

Introduction to the 16 multiple-choice questions

When people complain, they usually expect for their listeners to provide feedback that fits their expectations. Some people can figure out what complainers want from their complaints, but others can't. In this task, you have 16 complaint texts written by different people. The texts also identify what kinds of feedback they expect from their listener. In this task, your work is to be as best of a good listener as you can. You will have 16 short complaints to read in the following pages. Please read each complaint carefully and try to figure out what the complainers need from you. After the 16 multiple-choice questions, you will see your score. The more correct answers you can guess, the better social skills you have.

Complaint 1

I don't usually get sick very often but this was the third time in about five months that I was sick. I take good care of myself; I eat healthy (for the most part), I exercise regularly, and I ALWAYS wash my hands. Yet somehow, other people in the house are tracking in germs and getting me sick. I feel like I'm being punished for no reason. After all, I have great hygiene and I'm generally a healthy person. I don't feel like it's my fault that I'm getting sick, and it really is an inconvenience for me. I have work to do and missing school costs money and affects my grades. On top of that, I just don't like feeling sick because it's terrible.

This time I got a fever and had a pretty rough night of tossing around in my bed because one minute I'd be cold and the next I'm boiling alive. Is it so difficult for other people to cover their mouth when they sneeze or cough, or to wash their hands regularly? I even make a conscious effort not to touch my face, which is difficult because I have the tendency to do it a lot. The fact of the matter is that I'm basically being punished for someone else's mistake(s) and it's not fair to make me suffer when I've done nothing wrong.

- What does the complainer want you to say or do in response?
 - a. just listen and don't interrupt
 - b. give advice or tell him/her what to do
 - c. sympathize with him/her
 - d. agree with him/her
- Which of the following strategies would you take to respond to the complainer?

- a. keep quiet and let him/her vent
- b. come up with a solution to handle his/her problem
- c. tell him/her, "I know how you feel"
- d. tell him/her, "I agree with you"
- How certain are you that your answers are correct?
 - 1 (Not at all certain) – 7 (Very certain)

(These three questions were used for every complaint.)

Complaint 2

I was frustrated with my job. Recently, there was a new project. Instead of assigning the work to me, my department outsourced the work to an outside agency and had them do the work. It was frustrating for me because I wanted to work on the project. Instead, I didn't have any involvement. Working on the project would've given me a chance to learn new things and hone my current skills.

Complaint 3

My boss is really annoying! She doesn't listen to me, has high expectations that are unreachable, and yells at me when someone else does something to me that isn't my fault! Just the other day she got mad at me because people weren't cleaning up at night as good as they are supposed to. I can't be there every single minute of the day to make sure everything gets done! She doesn't understand how hard it is to reach out to that many people and make them remember and follow through with their correct duties. I know that she is just doing her best to make sure I do my best, but the way that she goes about it is really annoying and condescending.

There are better ways to instruct someone lower than you without degrading them or making them feel terrible and stupid. I know this because I'm able to do it! It's annoying to know that I'll be at this job for at least another year and she will still be there and there is no way she will change her ways. I'm not sure what to do or what I can do besides just gritting my teeth and putting up with her. As a college student with other responsibilities outside the workplace, I feel she is inconsiderate and doesn't understand how hard it is to be a student leader and an manager at the same time.

Complaint 4

I was trying to open a CD with xxxx Bank, the same day I did that I transferred 1,500.00 into that account, I was already a customer. They refused my application but did not email me and let me know. Now the \$1500.00 is in a non-existent account and I have no idea where my money is. I called them numerous times and after being on hold for hours throughout the weeks, now they say they are investigating where the money is. They have no clue... I just want them to forward the money back in its originating account. I am so upset about this whole situation.

Complaint 5

I cannot believe I lost my job. First of all, I was much more qualified, and should have had the permanent job, not the temporary job. The other guy only got the job because he was kissing the manager's butt. They didn't like me because I was a transfer rather than being homegrown. I had all of the qualifications that were advertised in the position. I

interviewed well, and had actually been in the position for a year before they decided to tell me that I didn't get the permanent job. Unbelievable.

Oh and now they are going to release me from my temporary job? I can't believe this. This place is totally messed up. Just because I didn't want to be their fall guy when the guy who is the manager of the office messes up the inspection. They can't decide if I should be responsible (because I am higher ranked and more experienced) or if he should be since he has the full time position. I refused to be held responsible for something that I had no control over. If we did well, it would be 'good job Brad!' but if we did bad it would be 'why did you let it all fall apart?' Nah, I don't think so.

So, now I don't have a job. I don't have a part time job. I'm totally unemployed. Oh, and my mortgage is due, and my student loans are due, and my credit cards are due. And I'm not going to find a job that pays anywhere near what I was making. The best that I'm qualified for is a 50% pay cut. Wow. How will my family survive on a 50% pay cut? It's all that manager's fault. He is a horrible person. What a jerk.

Complaint 6

Ok. I experienced a negative situation not long ago, at work. I was actually threatened to be fired for things I am not directly responsible for. I talked to a person above my boss. Excuse me Mrs xxxx. I would like to complain about the situation that recently happened. As you know, my work involves delivering mails to specific places, people and companies. I have been recently accused of not delivering mail correctly on some places. Allegedly, some people had complaints that they did not receive their mails repeatedly, and I receive an official warning, although I tried to explain the crucial circumstances behind this. So I would like to explain the matter to you: in the given area, there are mostly older people living who, as it seems, do not like new people. Since I am quite new in this position, they make out problems to me.

Complaint 7

My complaint is that I'm having a difficult time finding work that pays decent and/or gives me enough hours to pay my bills. I'm 50 and have worked in offices, run my own businesses, worked with customers face to face and over the phone. I have computer skills. I'm outgoing, but no matter what anyone says when you get to a certain age you're not wanted. At that point if this is the way things are then there should be a way for us oldies to have some income before retirement age to make it through. I'm willing to work, I'm a hard worker so where are the jobs?

I'd do several part time jobs but I'm not even given an interview. The jobs I have seen have been commission only and even those haven't worked out. There really isn't more to say about that but since I've only written for 3 min and 12 sec. I'm supposed to sit here and come up with more complaints. Hmmm, let's see what does one do when they don't have a steady income, are in their 50's have sold off everything of value including wedding rings? Really this is America, the land I was born. The land I was told I would make a good living and have job security. Who screwed that up for us? What government or banking idiot did that? Stringing them up won't help so what will change things for the...

Complaint 8

It really upset me that he won't explain to his friends that I'm his girlfriend. Yeah, I get that we're long distance and everything but the fact that he just refers to me as a friend bothers me. I'm glad that he refers to me at all, but what is he going to do when I go out there and he is pretty much forced to come clean about the whole situation? I know he loves me, but sometimes I wonder like if it's just because I'm convinced.

Yet at the same time I know it's not because he puts up with my stomach and all my crazy health issues. Or maybe it's because neither of us knows when I'll be able to fly there, or he'll be able to fly here. Because let's face it flying across the country is super expensive. I don't know. I still can't quite put my finger on why it bothers me. We'll kinda I can, because all my friends know about him and my family as well. But his friends and family don't and ugh it's super annoying. I know I'm being petty and that bothers me too. We didn't have nearly as many of these problems when his dad still lived at home, but now that he's got Jake as a roommate and his buddies are there pretty much every single night it is becoming something we bicker about constantly. I really do love him, but ugh sometimes I wonder if the distance or the age difference is what is going to kill us. I kinda think this whole situation is stupid, but it just bothers me and UGH. Like it seriously upsets my stomach to think about how we're most likely going to be grumpy tonight because of it as well. I just have to keep being strong and pushing forward I guess, and I have to remind myself that he is nothing like Txxx. Shit, I think that's the crux of it isn't it? That I'm afraid that my relationship with xxx will turn out like my relationship with Txxx.

Complaint 9

I wanted to open a new bank account, so I went online to my bank's website to see what my account options were. I also wanted to be knowledgeable about the different accounts. When I decided which account I wanted, I took a quick drive to my local bank, and told the manager I wanted to open a new account, and which account I wanted. He told me he wanted to ask me a few questions to decide which account was best for me. I answered his questions, and he offered me a different account from the one I wanted. I told him I didn't want an account with a monthly fee. He gave me reasons why this account was better. I told him about the account I saw online, and he told me that the requirements had changed for that account, and the minimum monthly balance had been greatly increased. I asked him why it said something different on their webpage. He told me they must not have updated it. He then offered me two other accounts, which were nothing that I was interested in. I told him that there were no accounts that I was interested in there, and that I would look elsewhere, thank you very much.

He became argumentative, and asked "Where are you going to go? Who is going to have what you are looking for?" After a little back and forth, he returned to his computer screen, and printed out a list of all the possible accounts. When I looked at the list, amazingly, the account that I wanted was there! When I pointed it out to him, he said that was a new type of account that they must have just added! I couldn't believe his incompetence and lack of customer service!

Complaint 10

I feel like complaining about the people across the street. It's not the people as much as it's their cats, I mean all in all it's the humans fault that the cats are an issue in the first place. If they were responsible they would keep their cats indoors. However that is not the case, they let their cats room loose. The issue I have is this, I have a garden. A nice little garden that I plant veggies of all kinds in. I enjoy my garden and the produce that comes from my hard work. Their cats have ruined my whole garden this year! They dug up my seeds and small plants then defecated in every inch of my garden.

Complaint 11

Recently I had the experience of having a very negative conversation with a coworker. It was sort of expected because we've had problems in the past. I was feeling very stressed because I needed an answer from this person and I was having a very hard time getting him to sit down and meet with me. I felt like I was bending over backward trying to accommodate his schedule. When it was finally our meeting day he didn't show up. It made me so angry! I felt very disrespected, ignored, and basically as if he didn't value me or my time. I called him on the phone and we proceeded to have a most unpleasant conversation.

Although I did get the answer I needed, the conversation was very uncomfortable and I was not happy to be having it! I felt like I was talking to a brick wall. He was not responding or explaining anything to me and I was really floundering. Some of the things he said really offended me and even hurt my feelings. I just wanted him to hear me and understand where I was coming from, but instead I ended up feeling even worse than I did before the phone conversation. I talked to my supervisor about it and he suggested that I talk to his supervisor, who is also my coworker's supervisor, since this was a situation that couldn't be resolved easily.

Complaint 12

I have recently lost a job and only have a limited amount of money to live on. Because of this I could no longer afford to pay the rent on my house. Unfortunately the only place I had to go to live was with my ex-husband. He has a mobile home. We have been getting on each other's nerves. He lets me know pretty much on a daily basis, what a burden I am and he always makes me feel that I am not doing enough around the house. I catch him giving me dirty looks quite often. I think I do much more around the house than he does. He pretty much plants himself in the recliner in front of the TV and never moves the rest of the night. He never does any yard work or hardly anything that needs to be done in the house either. I get the feeling he just sets and judges me all day. There was a reason we split up in the first place and now to find me back in his house is really getting me upset.

Complaint 13

Recently my wife and I had our first child, and the delivery was very difficult. My wife went into labor around 2 in the afternoon, and I had to rush home from work, and our hospital is about 30 minutes away without traffic, but we hit very heavy traffic on the way to the hospital. She had a 103 fever, and was having severe contractions on the way, and we were very stressed to say the least. Once we got to the hospital it very important that she gave birth quickly as the baby could get a risk of infection. It was very scary, but it is over and we have a happy healthy boy.

Complaint 14

A co-worker does not do his job thoroughly, relying on machine translation to translate an article, without subsequently reviewing the translated text to see if it makes sense. As a result, the translated script looks like an English one, but actually, many sentences are just a collection of English words that do not make logical sense.

Being the checker/reviewer, I end up having to read and try to make sense of the translated document, then read through the original document to figure out the original meaning and intent. This creates double work for me. More research is needed to verify the actual meaning of the original text.

For all that amount of work, I am only being paid one-quarter of the per character rate that the co-worker is getting. My concern is that he will simply do a slipshod piece of work and get full payment, and leave it to me to remedy all the factual and language mistakes that he had made. It is very frustrating because the amount of time and effort I put into the piece of work is not at all commensurate with the fee that I am being paid to do the review work. So far, feedback the manager in charge has not brought about any improvements.

Complaint 15

I am checking out with my items at the local xxxxx. As usual, the store is understaffed with only three registers open and a full parking lot. Every checkout line has at least 5 to 8 people queued up to check out. I choose my line, based on how competent the cashier looks as well as how many items the people in line have.

As I finally become the second person prior to checkout, I notice the woman in front of me has not even begun unloading her cart to the conveyor. The person ahead of her is completing payment and has all her items bagged and ready to go. This woman in front of me is busy on her phone talking to someone. To top this off she begins cracking open snacks from her basket so she has something to stuff in her face while she's chatting away. To be honest, it does look as though she could skip 2 or 3 hundred meals and would still be doing fine... She finally notices it's her turn to check out. Does she stop eating or end her call? Of course not! She shoulders the phone and begins slowly placing one item at a time on the conveyor while she eats and talks. I do not understand how people like this can be some completely unaware of how shitty behavior like this is and how people view it.

Complaint 16

I was very unsatisfied with my xxxx injections for my yyyy. It has been 2 weeks and I'm still in pain. My right eyebrow hurts all the time. The neurologist wants to be in charge of my pain control and told me not to see anyone else. I'm out of the 10 pills he gave me that barely worked. I called and they said I'll be called back in the afternoon. He's very stingy with good pain medication so I guess I'm just supposed to suffer. I think the xxxx helped my regular yyyy but that this constant pain is supraorbital neuralgia.

I wish he would try to give me a nerve block for it, but doctors (especially neurologists) don't like being told what to do. I really hope he calls me back soon and gives me an appointment for a nerve block or some prescription medicine. I've already been to the ER twice in the past 3 months for migraines. They probably think I'm drug-seeking. My pain

is real. I'd also like to tell him about a nerve decompression surgery, but I don't want to make him mad. Not many doctors do it anyway. Mostly plastic surgeons I think do it.

Self-Report Measures

Social Skill Inventory (SSI): Please read each statement and rate how much you agree or disagree with the statement using the following scale: (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = neutral, 5 = slightly agree, 6 = agree, 7 = strongly agree)

1. When I talk with most people the conversation flows effortlessly.
2. If I'm at a party with a lot of unfamiliar people it is often hard for me to relax and mingle. (R)
3. Friends say I'm a people person.
4. I sometimes feel like my social interactions are phony.
5. Talking with new people is fun.
6. I easily adapt to new settings with unfamiliar social rules.
7. I enjoy just sitting and chatting with people.
8. I tend to make people uncomfortable. (R)
9. I'm able to connect with others even if we have very different backgrounds.
10. I am usually able to pick up on what is and isn't socially acceptable, even if the situation is very unfamiliar.
11. Most people consider me to be quite socially skilled.
12. If three strangers walked into an elevator and all faced in the wrong direction, I probably would also.

Note. (R) = reverse-scored items.

The Single-Item Self-Esteem Scale

1. I have high self-esteem. (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = neutral, 5 = slightly agree, 6 = agree, 7 = strongly agree)

Ten-Item Personality Inventory (TIPI): Here are a number of personality traits that may or may not apply to you. Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other. (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = neutral, 5 = slightly agree, 6 = agree, 7 = strongly agree)

I see myself as:

1. Extraverted, enthusiastic.
2. Critical, quarrelsome. (R)
3. Dependable, self-disciplined.
4. Anxious, easily upset. (R)
5. Open to new experiences, complex.
6. Reserved, quiet. (R)
7. Sympathetic, warm.

8. Disorganized, careless. (R)
 9. Calm, emotionally stable.
 10. Conventional, uncreative. (R)
- Note. (R) = reverse-scored items.

Autism Spectrum Quotient scale (1 = strongly disagree, 2 = disagree, 3= slightly disagree, 4 = neutral, 5 = slightly agree, 6 = agree, 7 = strongly agree)

1. I find it easy to work out what someone is thinking or feeling just by looking at their face. (Social Skill Item)
2. I find making up stories easy. (Imagination)
3. I would rather go to a library than to a party. (Social Skill Item)
4. When I'm reading a story, I can easily imagine what the characters might look like. (Imagination)

The Empathy Quotient (EQ): The Empathy Quotient is intended to measure how easily you pick up on other people's feelings and how strongly you are affected by other people's feelings. Please read each of the 60 following statements very carefully and rate how strongly you agree or disagree with them by circling your answer. There are no right or wrong answers, or trick questions. (1 = strongly disagree, 2 = disagree, 3= slightly disagree, 4 = neutral, 5 = slightly agree, 6 = agree, 7 = strongly agree)

1. I can tune into how someone else feels rapidly and intuitively.
2. I am good at predicting how someone will feel.
3. Other people tell me I am good at understanding how they are feeling and what they are thinking.
4. I can tell if someone is masking their true emotion.
5. Friends usually talk to me about their problems as they say that I am very understanding.

The Systemizing Quotient (SQ): The Systemizing Quotient gives a score based on how interested you assess yourself to be in each of the following forms of systemizing. Systemizing is the drive to analyze and explore a system, to extract underlying rules that govern the behavior of a system; and the drive to construct systems. Please read each of the following 60 statements very carefully and rate how strongly you agree or disagree with them by circling your answer. There are no right or wrong answers, or trick questions. (1 = strongly disagree, 2 = disagree, 3= slightly disagree, 4 = neutral, 5 = slightly agree, 6 = agree, 7 = strongly agree)

1. I am fascinated by how machines work.
 2. I find it difficult to understand instruction manuals for putting appliances together.
- (R)

3. If I were buying a stereo, I would want to know about its precise technical features.
4. If I were buying a car, I would want to obtain specific information about its engine capacity.
5. If I were buying a computer, I would want to know exact details about its hard disc drive capacity and processor speed.

Note. (R) = reverse-scored items.

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